

Inside Dope

By GEORGE
F. TAUBENECK



Learn to live and laugh —
thus delay your epitaph

Story of the Week
Insult of the Week
Quote of the Week
Parkinson's Law
Air Conditioned Schools

Story of the Week

Astonished was St. Peter, so the story goes, when two Soviet satellite scientists approached him at the Pearly Gates.

"I thought you Russians were atheists," the heavenly Admitter exclaimed. "What are you doing here?"

"Please, sir," one of them blurted, "we lost our ball, and want to retrieve it."

Insult of the Week

"If anybody ever puts a price on your head, take it."

Quote of the Week

Just about the time you and all your associates are getting sick and tired of the messages your company is telling the public month after month—just about the time you decide you must change to a fresher appeal—that is *exactly* when the public is beginning to become aware of what you have to say.—*Management Briefs.*

Parkinson's Law

You might suspect that a book written by a professor of economics (who has taught in various British Empire universities) would be dry reading.

Here's one that isn't: "Parkinson's Law"—a collection of essays by C. Northcote Parkinson.

It will delight (or dismay) anyone who is involved in the sometimes wearying and/or exasperating details of "organization" activities.

Key chapter is subtitled "The Rising Pyramid." In this essay the distinguished author develops his theme that there's no limit to how large the staff of any organization (commercial or governmental) can grow.

In the meantime, of course, benefits to taxpayers and stockholders steadily diminish.

"Organization for the sake of organization," in short, is a debilitating disease. Parkinson's premise: every organization grows at least 6% every year, for no valid reason (outside of increasing a department head's power or salary) and for no good purpose.

No wonder our taxes get rougher every year, and corporate profits diminish simultaneously!

(Concluded on Page 12, Col. 3)

'Big Systems' Show Greatest '57 Sales Gain

'Large a Potential as Any Other Type' Seen

WASHINGTON, D. C.—Big "systems," which gave most Americans their first taste of air conditioning and which still account for the largest share of the industry's sales, showed a bigger gain in 1957 than any other segment of the industry, it was reported recently by Geo. S. Jones, Jr., managing director of the Air-Conditioning & Refrigeration Institute, following a meeting of ARI's Air-Conditioning & Refrigeration Systems Section.

At the same time, it was pointed out that the installation of large systems has as great a potential as any other segment (Concluded on Page 4, Col. 4)

Typhoon Air Conditioning

Adding Heat Pumps to Line

BROOKLYN—Typhoon Air Conditioning Co., division of Hupp Corp., is entering the heat pump market on a nationwide scale.

The company disclosed that it will shortly announce compact, self-contained, air-to-air heat pumps in 2, 3½, and 5-ton models to its dealer organization throughout the country. The new units are the first to be a part of Typhoon Air Conditioning Co.'s own line. They supplement the product line of Typhoon Heat Pump Co., another Hupp division, which manufactures heat pumps in sizes up to 40 tons, in water-to-water, water-to-air, and air-to-air models.

By adding heat pumps specifically designed for the budding national market and offering (Concluded on Page 27, Col. 2)

HOW BIG A PAWN

... is refrigeration in the rough and tumble battle for ice cream distribution? How many millions—tens of millions—of dollars do large dairies invest in cabinets for their retail outlets? You may get a surprise when you read the answer in the COMMERCIAL SECTION ...

... NEXT WEEK

Sutton Outlines New Plans for Dealer Stocks

WICHITA, Kan.—O. A. Sutton Corp., Inc. has instituted a new "Secured Distribution Plan," covering all "Vornado" products, under which the company keeps the dealer stocked with an adequate model mix.

Al Bross, vice president in charge of sales, offered the following explanation of a statement in the public press quoting O. A. Sutton, chairman, as saying that the company has switched to a selling basis of full payment on delivery:

"Under Vornado's new Secured Distribution Plan we keep the dealer stocked with an adequate model mix. The dealer has no investment nor does he (Concluded on Page 25, Col. 4)

Warns Heating Men On 'Restrictive' Mich. Electric Law

By John O. Sweet

GRAND RAPIDS, Mich.—The need for and ways of strengthening their selling efforts, both individually and collectively, were outlined for contractors attending the two-day 47th annual convention of the Michigan Heating & Sheet Metal Association at the Hotel Pantlind here.

In addition, the contractors were warned of restrictive legislation which may hinder their installation and service operations.

The convention was marked (Concluded on Page 25, Col. 1)

UA President

Advices Contract Revisions To Bar Closed Shop Provisos

6 UA Steamfitters Return to M-H Work After 3-Month Strike

SACRAMENTO, Calif.—After being on strike for three months, six steamfitters of United Association Local 477 here have been permitted to return to work for Minneapolis-Honeywell Regulator Co.

Business agent Wm. M. Francis told M-H and Associated Plumbing Contractors here the steamfitters will be allowed to work to finish all contracts on hand at the time they were pulled off the job in December in an attempt to force five M-H electrical supervisors to join the Plumbers.

The electrical supervisors decided not to join the UA.

Ward Appointed To Head Worthington's Reorganized Sales

HARRISON, N. J.—Matthew M. Lawler, vice president and general manager of the Air Conditioning and Refrigeration Div. of Worthington Corp., has announced a reorganization of the division's Sales Dept.

Andrew F. Ward has been appointed manager of distribution and will be responsible for the sale of all the division's products sold through franchised distribution.

The Air Conditioning and Refrigeration distribution field sales organization in six districts is also under his direct supervision. Ward, who was formerly associated with Chrysler Airtemp, came with Worthington in 1954, according to the announcement.

Earl R. Michel has been appointed manager of direct sales and will be responsible for direct sales of all the division's product sections as well as the administrative sections. Michel (Concluded on Page 6, Col. 3)

WASHINGTON, D. C.—To avoid involvement with new National Labor Relations Board policies, Peter T. Schoemann, president of the United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry, has advised UA locals to revise their contracts to eliminate terms and phrases that might be construed as embracing closed shop provisions.

Schoemann made his suggestion in a letter to locals which branded the present board as anti-labor. He was reacting to a letter recently sent to unions and contractors by Jerome Fenton, general counsel for NLRB, advising them to correct illegal hiring practices or face application of the Brown-Olds remedy.

That remedy would require unions maintaining closed shop provisions in their contracts to reimburse to all members all money collected under the illegal contract provisions.

"The present Eisenhower board is not satisfied with a fine and jail sentence," Schoemann declared, "they wish also to completely bankrupt labor unions by their present policy." He added that the "present Eisenhower-appointed labor board is legislating and making the Taft-Hartley Act far worse than Congress legislated."

Detroit Controls Names New Top Executives

DETROIT—William A. Haist, Jr., has been named president of Detroit Controls Div. of American Standard here, succeeding Charles H. Hodges, Jr., who has been appointed to direct a special growth and development study in the controls and instrumentation field for American Radiator & Standard Sanitary Corp.

Several other changes were made in executive staff at Detroit Controls, which manufactures controls for air conditioning, refrigeration, home heating, appliance, transportation, (Concluded on Page 25, Col. 3)

Set Program for Australian Refrigeration Show, Conclave

SYDNEY, N.S.W.—Australia's biggest gathering of refrigeration people is anticipated when the annual federal conference of Australian Institute of Refrigeration is held May 5-9 in conjunction with the forthcoming first AIR Exhibition and Convention at the R.A.S. Show grounds here May 6-9.

It was announced that more than 1,000 Australian, American, and European business firms will participate and/or send delegates to the conven-

tion and Exhibition. George F. Taubeneck, editor and publisher of AIR CONDITIONING & REFRIGERATION NEWS, will be one of two featured guest speakers.

The federal conference, held in rotation in all Australian state capital cities, is attended by delegates, members, and visitors from each state division of AIR covering all the commonwealth. Agreement was reached between promoters of the exhibition and convention and the (Concluded on Page 6, Col. 1)

BEHIND PAGE ONE . . .

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Servicing Auto Air Conditioners

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March 25-27

Resistance Heating, Heat Pump Talks, Report on Projected Handbook To Highlight EEI Sales Conference In Chicago

NEW YORK CITY—Electric resistance space heating and the heat pump will get considerable attention at Edison Electric Institute's 24th annual sales conference to be held March 25-27 at the Edgewater Beach hotel in Chicago.

INDIVIDUAL GROUPS TO MEET TUESDAY

On Tuesday, March 25, the four groups of the Commercial Div.—Residential, Farm, Industrial Power and Heating, and Commercial Sales—will hold individual sessions. General sessions are scheduled for all day Wednesday and Thursday morning.

According to the tentative program for the conference, the

entire Tuesday afternoon sessions of the Commercial Sales Group will be devoted to talks on resistance heating and heat pumps. G. W. McElhaney, chairman of the Electric Space Heating and Air Conditioning Committee, will preside.

This session will get under way at 2:15 p.m. with a talk by Hugo E. Beck, superintendent, Bayless School District, St. Louis County, Mo., on "Why We Chose Electric Heating."

'WHAT'S HAPPENING IN SCHOOL HEATING'

Planned next is a presentation on "School Heating—What's Happening" by J. P. Napier, power sales engineer, American Gas & Electric Serv-

ice Corp., New York City. His talk will be based on the combined experience of the American Gas & Electric companies in the school heating field.

With reference to another talk, by Hugh Roberts of Alabama Power Co., the program notes that the most ambitious project of the present ESHAC Committee is the preparation and publication of an Electric Resistance Space Heating & Heat Pump Handbook. Roberts, who is chairman of the subcommittee assigned this project, will report on its present status.

Other scheduled speakers are Glydewell Burdick of Wisconsin Power & Light Co. and Robert C. Geyer, architectural engineer, Commonwealth Edison Co., Chicago. Burdick's topic is "We've Got the Weather Licked," and Geyer will discuss "Off-Peak Electric Space Heating."

'LONG PANTS' FOR HEAT PUMP

Winding up the session, H. M. Brundage, general manager of General Electric Co.'s Weathertron Dept., will speak on the subject "Long Pants—At Last."

At the Tuesday morning session of the Industrial Power and Heating Group, one of the speakers will be Robert G. Werden, general sales manager of engineered machinery for York Corp. He will present a paper covering description, application, and market potential of multi-stage heat pumps.

Leading off the afternoon session, G. G. Freyder of Commonwealth Edison Co., Chicago, will review installation and operating costs of centrifugal and absorption refrigeration systems, pointing out the comparative advantages and disadvantages of both. A summary of studies on some 75 installations of both types will be reviewed.

'ASSURE THEIR COMFORT'

In another of the many talks scheduled for the conference, E. W. Smith, vice president of Owens-Corning Fiberglas Corp. and president of the National Mineral Wool Association, will speak on the topic, "Assure Their Comfort and It's Easy To Sell."

T. O. McQuiston, chairman of the Commercial Div. Executive Committee, reported that a few small suites and sunparlor suites are available at the Edgewater Beach hotel. Single and twin rooms are sold out. However, he said, accommodations are available at the Sands motel adjacent to the hotel.

HOW TO GET ROOMS

McQuiston suggests to those who plan to attend the conference but who have not arranged for hotel accommodations to write to Dale R. Hershey, Edgewater Beach hotel, Chicago 40, Ill. Cancellations may make rooms available at the hotel, but, if not, Hershey will aid in obtaining rooms nearby, it was noted.

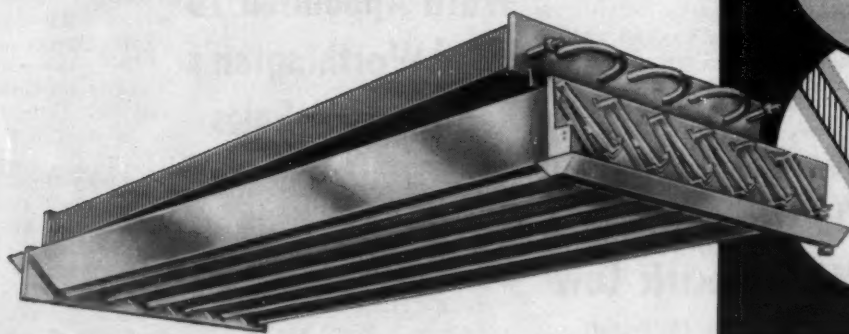
Registration fee for the conference is \$17, including tickets for Wednesday and Thursday luncheons and a copy of the proceedings.



Aid To Air Conditioning Education

CHECK from Western Air Conditioning Industries Association made possible by the Western Air Conditioning, Heating, Ventilating, and Refrigeration Exhibit, to assist with a new educational program instituted by California State Polytechnic college to encourage more young people to enter the air conditioning and refrigeration field is presented by William P. Tennity, WACIA president, seated to left, to Harold P. Hayes, dean of California Poly. Watching are association board member (l. to r.) David Reznick, Fred J. Tabery, Peter Askew, Rudy Harkens, and Robert Savage.

NEW KRAMER COIL and BAFFLES



with attractive lifetime
PLASTIC CLAD ALUMINUM
at no extra cost!

Permanently Attractive Baffle—Constructed of a new plastic-clad aluminum which combines the strength and flexibility of aluminum with corrosion-resistant plastic for lifetime beauty. It will not chip, peel, corrode, sag, fade nor get brittle. It is absolutely odorless and sanitary. The coil with its colorful baffle will retain its attractive appearance for the life of the cooler.

Dripless Triple-Trough Design—The triple-trough—a unique Kramer feature—provides a deeper primary trough for unrestricted draftless circulation of cool air. The narrow third trough reduces dripping to a minimum, making the Kramer triple-trough baffle virtually drip-proof.

Easy to Install—Kramer coil and baffle combinations are completely assembled at the factory. Shipped in closed wooden cases, they arrive on the job clean and ready for installation, saving assembly and installation time.

Immediate Shipment—A complete range of 15 carefully selected sizes giving maximum Btu per dollar for every application are carried in stock for immediate shipment. Both left-hand and right-hand baffles are available.

WRITE FOR BULLETIN CBC-276C

KRAMER TRENTON CO. • Trenton 5, N.J.

44 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER



HAD THE "RED CARPET" TREATMENT LATELY?

Time was when a customer's order was his passport to royal attention—a signal for the "red carpet" to be rolled out. But times change. And if you've been wondering what ever happened to the old "red carpet" treatment for customers, we'd like to talk to you.

At Bendix-Westinghouse, your order still makes you the most important individual in our business. Whether large or small, your order is welcome and

important—because it gives us a chance to prove to you how good our product is and how anxious we are to please in every way we can.

The finest possible "red carpet" treatment is, of course, to give the customer the best compressor he can buy. And, as 162 new air conditioning and refrigeration customers have discovered for themselves in the past year, Bendix-Westinghouse compressors have the highest possible quality and

dependability.

Why not do as so many other manufacturers have done! Send us a large enough initial order to prove to yourself that everything we say about Bendix-Westinghouse dependability is true. Call John Morrill, General Manager, or Don Wood, General Sales Manager, and say that you want to get a trial order going. Telephone: HARRISON 4-6471, Evansville, Indiana.

Bendix-Westinghouse

EVANSVILLE, IND.

A Division of Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio—Export Sales: Bendix International, 205 E. 42nd St., New York 17, N. Y.

65% of Exhibit Space Gone

NAPC Convention, Exposition Scheduled For June 30-July 3 In Los Angeles

WASHINGTON, D. C.—Sixty-five per cent of exhibit space in the National Plumbing-Heating-Cooling Exposition has been sold as of March 1, it was announced by the National Association of Plumbing Contractors, who is sponsor of the show.

The Exposition is set for the Pan Pacific Auditorium in Los Angeles June 30 to July 3, and is held in conjunction with the 76th annual convention of the NAPC.

Plans also were announced by the association for opening the exposition for two nights—one for a special attendance by members of the AFL-CIO pipe trades in California, and another for the general public. Approximately 40,000 sq. ft. (net) of floor space in the huge conventional hall will be devoted to exhibits of hundreds of manufacturers and suppliers in the industry.

An additional feature of the exposition will be half a dozen complete model homes, displaying the latest products and techniques of the home building industry and including the famed "Air House" designed by Frank Lloyd Wright.

More than 6,000 are expected to attend the industry's 76th annual convention. Another feature of this year's convention will be a one half day picnic and evening barbecue at Disneyland in nearby Anaheim, Calif., according to the announcement.

New Chicago Contract Allows Stores To Sell Frozen Meat Specialties

CHICAGO—Distribution has begun here of four Swift & Co. frozen meat specialty items formerly banned for retail sale in this market by union contracts.

Beef hamburger patties (12 oz.), cubed beef loin luncheon steaks (8 oz.), beef sandwich steaks (8 and 12 oz.), and buttered beef steaks (8 oz.) are now sold in this area, last major market to allow sale of packer packaged frozen specialty meat products such as flaked and chopped patties and chops.

When new union contracts recently were completed between supermarket operators and retail meat cutters, such items were permitted to be moved in the Chicago area.

Outlook for Big Systems--

(Concluded from Page 1, Col. 2) of the industry, and possibly greater in some fields.

Installed cost of central station air conditioning systems which went into operation in large multi-room buildings, and commercial and industrial applications in the U. S. during 1957 was estimated by the section to be \$598,900,000, as compared with a revised figure of \$528,180,000 for 1956, and \$434,120,000 for 1955. The gain for 1957 over 1956 represents almost 15%.

Jones said manufacturers who make up the Systems Section, representing more than 95% of all production of this type of equipment in the country, estimate that about half of last year's volume was installed in multi-room buildings—offices, etc.—and that the other half is about equally

divided between commercial and industrial installations.

The Section is particularly optimistic over the potential in the industrial field, which they estimate is five times the potential in both the multi-room buildings and in commercial establishments, he added.

Only about 5% of factories, plants, and other industrial establishments now have air conditioning, but as management recognizes the economic benefits of air conditioning through improved employee health and morale, lower rates of absenteeism, increased efficiency, and greater production, this market becomes increasingly important, it was pointed out.

Installed value of systems put into operation each year since 1950, based on figures reported to the ARI, is estimated at:

1950	\$341,770,000
1951	378,200,000
1952	252,920,000
1953	285,040,000
1954	378,810,000
1955	434,120,000
1956	528,180,000
1957	598,900,000

Arkla Promotional Material Sells 'New Way of Life'

EVANSVILLE, Ind.—Arkla Air Conditioning Corp. has introduced new promotional material designed as "a fresh approach to selling" what it terms "a new way of life" in the comforts of year-round gas air conditioning.

Pushing the Arkla-Servel "Sun Valley" residential air conditioner, this subsidiary of Arkansas Louisiana Gas Co. offers folders containing ads claimed to make dealers' newspaper ad campaigns more effective, approaching the strongest selling motivations.

Available are mats for newspapers, house organs, directories, and other printed media; reprints for bulletin boards, counter, window, and other point-of-purchase displays; TV and radio commercials; bill enclosures; and billboards. Theme, as often as possible, should motivate the reader to call or see the local company, Arkla advises.

Sales promotion material for the salesman is also offered, including proposal cover, sales booklet, and mailing inserts. Orders of materials may be obtained from the advertising department of the firm, Slattery building, Shreveport, La.

SUBCOOLED LIQUID FEED AT CONSTANT PRESSURE AND SUCTION TEMPERATURE

For any refrigerant. Feed pressure adjustable.

INCLUDES COMPRESSOR PROTECTION.

Write for Bulletin CC-1

J. E. WATKINS CO. MAYWOOD, ILLINOIS

For Your Reprint Copy "Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich. Only 25¢ each.

"FACTORY-SEALED" means

EXTRA PURE

EXTRA DRY

ISOTRON®

CONTROLLED-PROCESS REFRIGERANTS

Pennsalt's Control Laboratory records prove that Isotron refrigerants are consistently and appreciably drier than the 10 parts per million moisture accepted as the industry standard.

Produced in the country's most modern fluorinated refrigerants plant, Isotrons have been approved and are being used by the leading manufacturers of refrigeration and air-conditioning equipment.

FACTORY-SEALED

Isotron is delivered in the only "factory-sealed" cylinders available in the industry today. This, along with the unique and exclusive Pennsalt controlled-process for manufacturing fluorinated refrigerants, assures highest purity and dryness.

And you can count on ample supplies of Isotron for all your needs. Production facilities have recently been doubled to meet growing demand. These expanded facilities are backed by a network of Pennsalt warehouses in all parts of the country from which "factory-sealed" cylinder shipments can be made fast.

For further information on Pennsalt's controlled-process refrigerants—the dryest you can buy—write Isotron Department 620, Pennsalt Chemicals Corporation, 3 Penn Center, Philadelphia 2, Pa.



ISOTRON
THE KEY TO MODERN LIVING

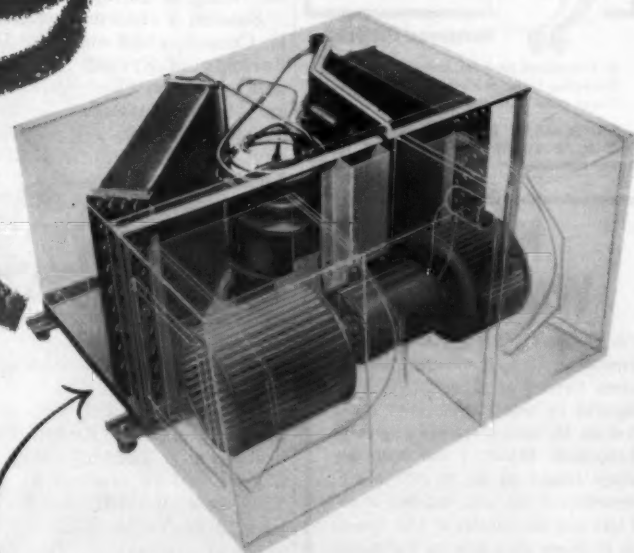
WHAT?

clinch
cooling jobs
with a
**HEAT
PUMP?**

YES...because

FEDDERS 3 HP

Adaptomatic heat
pump gives your
customers extra
months of comfort...
yet costs less than
many central
cooling systems!



- No refrigerant piping
- No water lines
 - Built-in low voltage panel
 - Fits through 24 inch openings
- Pressurized air system permits installation anywhere

Fedders 3 HP Adaptomatic Heat Pump is the lowest priced unit of its kind—less than half the cost of most competitive heat pumps. Yet, it's completely equipped with automatic Main Control thermostat . . . low voltage control panel including relays . . . auxiliary thermostats mounted in duct section. Plus 15 KW booster heaters in a duct section specially designed for simple installation.

And the 3 HP Adaptomatic is 100% foolproof . . . completely pre-wired for year 'round operation. Adjustments can be made in minutes if heat loss calculations are inaccurate. without opening cabinet or dismantling ductwork. And, as thousand of contractors have discovered, the Adaptomatic installs easier and faster than any other air conditioner in the world.

Here's the unit that puts the entire central cooling market in your pocket. Offers your customers an unmatched combination of service, comfort, and low cost. What customer *could* resist bonus benefits like these:

- 1 Extra months of comfort—heating in early spring and late fall . . . at lower operating costs in many areas than regular central heating systems.
- 2 A complete reserve or replacement heating system—the most modern in the world. Adds up to \$1500 to resale value of any home.
- 3 Ready and completely equipped for year 'round use—once owner sees how its unmatched cleanliness cuts housecleaning chores and redecorating costs.

FEDDERS



More revolutionary features, more revolutionary products
in 1958 than ever before.

FEDDERS-QUIGAN CORP.—Dept. AC-318
Maspeth 78, New York

Gentlemen:
Please send me,
without obligation,
complete information
on the Fedders 3 HP
Adaptomatic
Heat Pump!

NAME _____
FIRM NAME _____
ADDRESS _____
CITY _____ STATE _____



WORKING ON plans for the May Australian Institute of Refrigeration Exhibition are Sam Hort, president of N.S.W. Div., AIR (l.), E. Walcott (center), and Ken Pilcher (r.) of Industrial Public Relations Service of Australia.

AIR Convention, Exhibition Plans--

(Concluded from Page 1, Col. 5) N.S.W. Div. of AIR composed of over 1,000 men from all sections of the air conditioning, refrigeration, and allied industries from top executives to apprentices and students on the joint venture.

S. Hort, president of N.S.W. Div., AIR, has announced a tentative conference program, subject to minor alterations only, he said, for the 1958 annual conference here.

Advance program of the first Australian Refrigeration and Air Conditioning Convention—subject to alteration—has been

announced. Delegates will be welcomed Monday, May 5 at 10:30 a.m. accompanied by a press, radio, and TV preview.

Outline for the Commercial Div., under leader Taubeneck, has also been offered. Hort will be session 1 chairman on Tuesday, May 6 at 2 p.m. Taubeneck will discuss "Techniques and Ethics of Selling" at that time followed by Sir Edward Hallstrom's covering "Refrigeration in Australia."

Will Speak on 'Service'

K. B. Thompson, vice president, Refrigeration Service Contractors Association of N.S.W., will chair the second session Wednesday, May 7 at 2 p.m. Taubeneck will cover "Service" and D. A. Chapman of Kelvinator S.A. will speak on "Practical Ideas for Installation and Servicing of Equipment."

Session 3 chairman will be E. E. Crouch, chief engineer Dairy Farmers of Sydney. Taubeneck will speak on "Refrigeration as an Aid to Marketing Including Self-Service" at 2 p.m. Thursday, May 8, followed R. Price, Australian Cellophane, Melbourne on "Pre-Packaging."

Chairman of session 4 will be H. G. Goldstein, federal president of AIR, on Friday, May 9. At 2 p.m. Taubeneck will discuss "Air Conditioning" and E. W. Collyer of Carrier will handle "Air Conditioning in Australia."

In the Technical Div. under leader Dr. (Ing) Rudolf Plank, first session Tuesday, May 6 at 8 p.m. will be chaired by Prof. J. P. Baxter, OBE, N.S.W. University of Technology.

Low Temperature Applications

Prof. Plank, director of the German Refrigeration Institute, will speak on "Lesser Known Methods for the Production and Application of Low Temperatures" followed by Roderick Sinclair on "Recent Developments in Rapid Freezing Meat in Australia."

Session 2 chairman will be Dr. S. H. Bastow, chief technical officer, CSIRO. On Wednesday, May 7 at 10 a.m. Prof. Plank will cover "Modern Methods of Food Preservation with Special Reference to Work in the USSR." Then A. Howard of

CSIRO will discuss "Food Preservation in Australia."

H. Stoneman, immediate past federal president of AIR will be chairman of third technical session Thursday, May 8 at 10 a.m. Prof. Plank will speak on "Frozen Foods—Methods of Processing on Land, Air, or Sea; Influence of Speed or Processing and Thawing for Quality, Distribution, and Holding Temperatures for Storage." R. Edwards of Qantas (Australian airline) will cover "Frozen Food in Australia."

Refrigerated Transport

Session 4, Friday, May 9 at 10 a.m., will be a symposium on refrigerated transport with Prof. Plank as leader. Dr. Plank, Taubeneck, R. Pearson, freightmaster, Goldstein, and E. Benson of Maitland Municipal Abattoirs will be on the panel.

A special buffet dinner session at 8 that night will be chaired by J. J. Maloney, minister for Labour & Industry. Prof. Plank and Taubeneck will comment on "The Australian Scene."

Provisional conference program will open with a reception for overseas and interstate visitors at 11 a.m., Monday, May 5. Councillors only may attend the council meeting at 2 p.m. that day, but everyone is invited to a conference dinner at 6:15 that evening.

On Tuesday, May 6 at 10:30 a.m. will be official opening of the exhibition with press, radio, and TV preview. After the first convention Commercial Div. session, everyone is invited to a visit to a local television station at 7 p.m.

Plans for Ladies

On Wednesday, May 7, there will be a ladies excursion to Koala Sanctuary and Bobbin Head at 2. Members only may attend the annual general meeting at 8 that night.

Councillors only may attend the councillors' luncheon at noon on Thursday and the council meeting at 7:30 that night. Ladies only are invited to a theater party at 7:30 p.m.

Buffet session is scheduled for 8 p.m. Friday. On Saturday, May 10 an all-day excursion to Sublime Point, atomic reactor, and National Park is planned.

First Australian Refrigeration and Air Conditioning Exposition will run from Tuesday, May 6 to Saturday, May 10, 11 a.m. to 9:30 p.m.

Worthington--

(Concluded from Page 1, Col. 4) has served with Worthington for over 25 years.

Peter A. McLeod has been promoted to the newly-created position of manager of product sales. In this new position he will be responsible for all the product sections except those products under the applied systems section, and also will coordinate with the application engineering section.

John C. Conrad, formerly technical sales representative of the Cleveland area, has replaced McLeod as product sales manager for centrifugal refrigeration products.

Charles V. Bengle has been appointed manager of the applied systems section and has responsibility for induction and fan coil systems.

Jones To Speak on Refrigeration at Ohio RSES Convention April 11-13

YOUNGSTOWN, Ohio — Twelfth annual convention of Buckeye State Association, Refrigeration Service Engineers Society, will be held in Pick-Ohio hotel here April 11-13, Virgil Kauffung, general convention chairman, announced.

George S. Jones, Jr., managing director, Air-Conditioning & Refrigeration Institute, will speak at the annual banquet April 12 on "The Refrigeration Industry, Past, Present, Future."

Registration will begin at 12 noon April 11 before a tour of the Youngstown Sheet & Tube Co. plant set for 1 p.m. Registration will also be held April 12 at 8 a.m.

First educational session is slated for 9:30 April 12 when E. L. Lewis, Cleveland district service supervisor of Carrier Corp., will discuss "Reciprocating Compressor Operation and Care."

At 10:30 Don J. Barday, special technical assistant, and Robert Geuting, field represen-

tative for E. I. du Pont de Nemours & Co., Inc., will cover "How to Store, Handle, and Use Refrigerant Safely and Efficiently." Lunch will be at noon.

Otto J. Nussbaum, engineer for Kramer Trenton Co., will detail "Installation and Servicing of the New 'Thermobank' Compressor" at 1 p.m. and R. E. Craft, research engineer for Ranco Inc., will discuss "Application of Automatic Controlling Devices for the Operation of the Heat Pump" at 2:30.

A business meeting and election of officers is scheduled for 4 p.m. and Jones will address the annual banquet at 7 the night of April 12. There will also be installation of new officers and a floor show.

Convention will conclude with a coffee hour and round table discussion on Sunday morning, April 13, at 10 with the final business meeting at 11.

Ladies program will include a social gathering at 7:30 p.m. April 11, a luncheon at 12 followed by entertainment at 1 p.m.

If Same as Made There

Canada To Up Import Duty to 22% On Room Air Conditioners

OTTAWA, Ont., Can.—Import duties on window air conditioners of a class or kind made in Canada will be upped from the present 7½% to 22% March 23, an official of the customs branch of the National Revenue Dept. announced.

It is not a case of a new tax being imposed, he pointed out, but the 7½% duty is in effect on all air conditioners and other appliances of a class or

kind not made in this country.

Until recently window air conditioners were in this category. But Canadian industry increased its production of the units and asked for an additional tariff protection.

Law requires the NRD to investigate such situations. If it is learned that domestic production of a certain commodity is as represented, then a raised tariff becomes effective.

U. S. May Pass Law

Carpenters' Efforts To Prevent Refrigeration Men from Moving Fixtures May Be Resolved

CHICAGO — The rock on which the legal dispute between carpenters and refrigeration mechanics in Minneapolis over who should unload and set refrigeration fixtures in place may be removed if an Administration recommendation is passed by Congress.

This was noted by Jerome Fenton, general counsel for the National Labor Relations Board in a speech here.

When the Minneapolis carpenters tried to enjoin the refrigeration mechanics from preventing them from doing this work, the state district court refused to issue an injunction because it lacked jurisdiction.

Even though the NLRB refused to consider the case, it still retained jurisdiction, the judge pointed out.

Fenton declared that proposed amendment to the National Labor Relations Act would permit the states to step up in to cases where the NLRB declines to assert jurisdiction.

Another Administration labor proposal would substantially modify the applicability of existing secondary boycott provisions to the construction industry.

It would permit unions to picket in situations where the secondary employer is engaged in work on a construction project together with the employer who is involved in the dispute, Fenton said.

A third proposal would restrict the use of a picket line to force a union on an employer and his employees when it is clear that the employees do not desire a union as their bargaining representative.

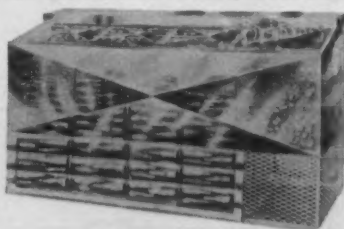
Another amendment would authorize NLRB to certify as bargaining representatives, without prior election, unions acting on behalf of employees primarily engaged in the building and construction industry. This is deemed necessary because of the transitory nature of jobs, Fenton indicated.

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NEWS' CLASSIFIED ADS

Can Supermarket Aisles Be Too Wide?

Where Should Meat Counter Be Located? Why Should Market Add Snack Bar? Where Should Main Entrance Be Located?

CHICAGO—Can a supermarket's aisles be too wide?

Definitely, Ralph E. Ernst, architect for National Association of Retail Grocers in the United States, told members of the National Commercial Refrigerator Sales Association here recently.

Supermarket operators today are thinking in terms of aisles 6½ ft. wide, he said. When aisles are wider, the customer has a tendency to shop only one side, missing products across the way.

This was one of a number of suggestions for store planners Ernst offered to the commercial refrigeration distributors at their annual convention.

Here are some others:

Try to get the customer to the meat department as quickly as possible. She builds her menus around meat, picking out other foods as they fit into her meat purchase. On that reasoning, it is not necessary to put the meat department at the back of the store. Instead put it close to the point where she enters the store.

Put delicacies at the end of the meat cases, staples right across the way.

When planning the sales area, include at least one concealed closet for the store's cleaning supplies. It should be handy so clerks can quickly and easily clean up broken bottles and spilled food with minimum interference to shoppers.

Provide a spot for checkout supplies and boxes at the front of the store near the checkout stands.

Carryout Room

Provide space for carry-outs. Ernst suggested a carry-out room at least 6 to 7 ft. wide where the packer can deposit a customer's order without leaving the store.

By putting shelving in the carry-out room for storing the grocery order until the customer picks it up, shopping carts can be freed more quickly for other shoppers. This will also cut down on cart pilferage as the cart need never leave the store.

Multiple Receiving Entrances Relieve Congestion

Try multiple receiving entrances for produce, meats, and dry groceries to relieve congestion and streamline handling. There should be a definite sequence of operations from preparation area to sales area, particularly in meat and produce.

A courtesy booth, by combining a number of miscellaneous small jobs such as check cashing, bottle exchange, utility bill payment, can make these services profitable.

Adding a snack bar and drink and candy vending machines helps keep the customer in the store longer, thus increasing her opportunity to make impulse purchases.

Using different colored refrigerated fixtures for each department were frowned on by Ernst. "It is almost impossible to get a wall color to blend with the

cases," he further asserted.

If one color case is used throughout, it is always possible to get a complimentary color, he added.

Wherever possible, he would prefer to see goods stored in a backroom rather than a basement.

"When you store in the basement, you need at least one conveyor. Conveyors take up valuable floor space," he added, "and more than one is actually needed to prevent bottlenecks."

With the growing importance of parking lots, Ernst advised that the main entrance to the store face the parking lot rather than the street. He suggested placing the checkout stands

conveniently near the parking lot entrance.

If this entrance is at the rear of the store, he urged isolating the customer passage from the storage area, both for appearance and to prevent congestion.

As a rule of thumb, a supermarket should have 3 sq. ft. of parking space for every square foot of building. This ratio should be four to one if there is any possibility of expansion.

Parking stalls should never be less than 9 ft. wide and preferably 10 ft. A 45° angle stall is better than a 90° angle stall. It is easier for women to park in a 45° angle stall.

When looking for a new store location, parking, of course, is

a major consideration. Another is natural barriers, such as railway tracks, rivers, rough terrain, and super-highways that cut off traffic. A third is natural streams of traffic that carry people to the store. A fourth is room for future expansion.

Ernst cautioned that women do not like heavy traffic. They will avoid it whenever possible. Further, they do not want to drive more than five minutes to reach the store.

Studying license plates of cars congregating in the area offers good clues to how far people will travel to shop there and from what areas they come.

How To Check Competitor's Sales

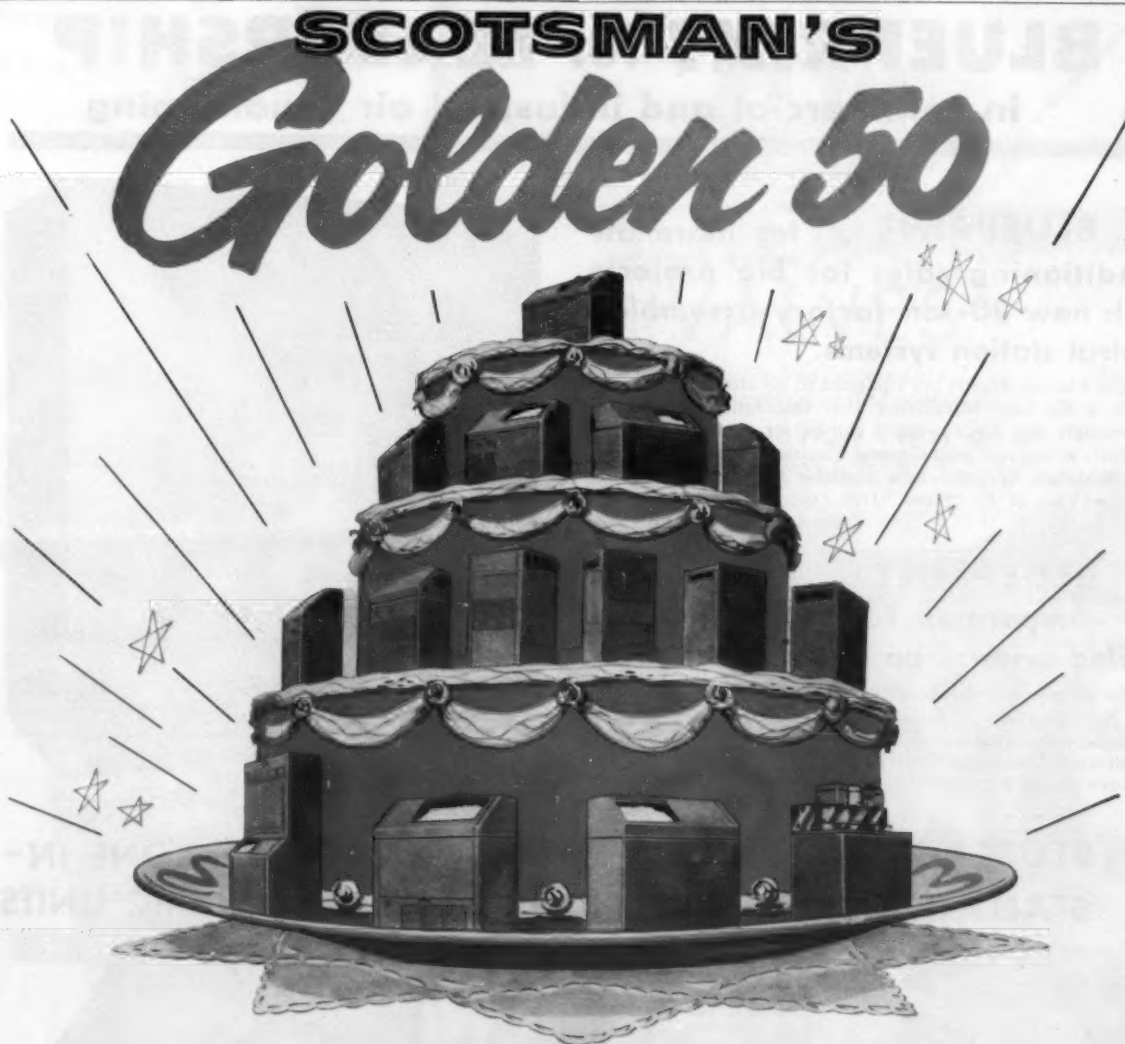
To check on how much business competition is doing, Ernst offered these handy guides: Figure \$6,000 per week per checkout. Or, figure an average of \$13 per week per sq. ft. of

sales area, Ernst explained. Another method is to make a cash register check. This is done by making the first purchase of the day and the last purchase of the day on the same register at the competitive store.

This slip will show the number of transactions between the first and last sale. Multiply this by \$4 as the average sale and multiply that total by the number of cash registers.

A formula for determining potential volume for a new store was offered by Ernst. Multiply the number of families in the trading area by \$1,000 (spent by the average family of four on food for a year) to get the total amount spent for food in the area.

Deduct from this 25% for small local stores and what volume competing supers are doing. What is left is the volume a new super could expect to do.



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NOW THERE ARE FIFTY MODELS in the Scotsman Ice Machine line! Fifty golden opportunities for you to make this the biggest profit year you've ever had! Never before have so many Super Cubers, Super Flakers, Super Bins and Drink Dispensers been offered to the trade!

Yes, now you can sell every prospect a Scotsman ice machine. Does he need a cuber? He can choose from 8 Super Cubers! Does he need crushed ice? You can

offer 24 Super Flakers to fit his exact needs. Does he need a drink dispenser or ice bin? You have just the right model to offer when you sell Scotsman!

Prospects are everywhere. Hospitals... schools... theatres... super markets... hotels... liquor stores... restaurants... clubs—there are scores of places that need and want Scotsman ice machines. Will you be the one to sell them in 1958?

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Subsidiary of KING-SEELEY Corporation

Trial Examiner Recommends NLRB Order

Attempts To Force Contractor from Doing Business with 2 Mfrs. Halted

WASHINGTON, D. C.—A union that induced employees of an air conditioning contractor to refuse to handle products of York Corp. and Barber-Colman Co. in order to force the contractor to cease doing business with those companies or to force York to stop doing business with the general contractor is guilty of prohibited secondary boycott activity, according to a National Labor Relations Board trial examiner.

Trial Examiner George A. Downing recommended that the board order the union to cease these activities and to post compliance notices.

The case involves Local 98 of the Sheet Metal Workers Inter-

national Association at Columbus, Ohio, its business representative Clifton Deangulo, and York Corp.

According to evidence introduced at the hearing, the union's contract with the Limbach Co., Columbus air conditioning contractor, requires that members of the local do all the manufacture, fabrication, installation, etc. of all sheet metal work of No. 10 U. S. gauge or lighter.

As part of a subcontract to York Corp. on the construction of an office building here, Limbach agreed to install York induction units under each window and Barber-Colman high velocity ceiling boxes. The York

units were not manufactured by sheet metal workers.

When the units arrived at the job site last fall, Deangulo allegedly ordered Limbach's employees, member of Local 98, not to handle the units. The men obeyed.

York then filed secondary boycott charges against the union by instituting injunction proceedings, got the union to agree to permit installation of the units.

The union's defense was that it had no quarrel with York, but only with Limbach for violating its agreement with the union. It claimed it was merely exercising a valid, contractual right to which Limbach had agreed in advance.

Thus it was engaged in primary, not secondary, activity, it was noted.

The trial examiner, acting on NLRB precedent, rejected this defense.

In First 11 Months of 1957

Mfrs. 2-Hp. Compressor Shipments Were 3 Times over 1956 Period, ARI Reports

WASHINGTON, D. C.—Manufacturers' shipments of compressor bodies during the first 11 months of 1957 were about 16% below comparable shipments reported in the same period of 1956, according to Geo. S. Jones, Jr., managing director of Air-Conditioning & Refrigeration Institute.

OUTPUT ESTIMATED AT OVER 95% IN U. S.

The figures are based on reports to ARI by companies whose output of compressor bodies is estimated to represent more than 95% of the U. S. total production. They do not include shipments of bodies produced for use in household re-

frigerators, it was noted.

The only two categories of compressor bodies in which appreciable gains were shown in the 1957 period over 1956 were 2-hp. bodies and those intended for automotive air conditioning.

AUTO COMPRESSOR SHIPMENTS SOAR

Shipments of 2-hp. bodies in the 1957 period totaled 211,233 units, compared with 70,408 in the comparable months of 1956; automotive compressor bodies increased from 255,348 shipped in the first 11 months of 1956 to 444,159 in the same period of 1957.

Biggest decreases were noted in 1/2 and 3/4-hp. bodies. The former dropped from 448,336 units in the first 11 months of 1956 to 96,718 in the same period of 1957, and the latter from 693,635 to 360,372 for the same comparable periods.

SHIP 3,738,686 UNITS IN PERIOD

Total shipments for the 11 months of 1957 numbered 3,738,686 units, compared with 4,479,320 in 1956.

November 1957 shipments of all types of compressor bodies (except household refrigerator types) totaled 202,323, compared with 277,092 in November, 1956.

The 1957 figures, along with the names of reporting companies, follow:

MANUFACTURERS' SHIPMENTS OF COMPRESSOR BODIES

Produced by Reporting Companies (Except for household refrigerators) Shipments Including Exports

Horsepower*	Nov., 1957	Nov., 1956
1/4 & under ...	21,757	384,623
1/4 ...	57,145	725,439
1/2 ...	14,831	226,411
3/4 ...	6,145	96,718
1 ...	5,718	360,472
1 1/4 ...	25,320	839,920
1 1/2 ...	13,394	221,812
2 ...	16,639	211,233
3 ...	4,657	93,618
5 ...	2,874	68,312
7 1/2 ...	1,982	41,020
10 ...	397	9,473
15 ...	256	3,438
20 ...	195	2,136
25 ...	144	1,785
30 & over ...	433	6,725
Total	171,867	3,233,123

For Ammonia Refrigerant—Total 77 1,392

For Automotive Air Conditioning—Total ... 90,359 444,159

Grand Total **202,323** **3,738,686**

*For all refrigerants except ammonia (excluding units for automotive air conditioning).

Reporting companies: Airtemp Div., Chrysler Corp.; Bendix-Westinghouse Automotive Airbrake Co.; Brunner Div., The, Dunham-Bush, Inc.; Carrier Corp.; Copeland Refrigeration Corp.; Curtis Mfg. Corp.; Refrigeration Div.; Frick Co., Inc.; Frigidaire Div., General Motors Corp.; General Electric Co.; Kelvinator Div., American Motors Corp.; Lehigh, Inc.; Tecumseh Products Co.; Trane Co., The; Vilter Mfg. Co.; Westinghouse Electric Corp.; Worthington Corp.; York Div., Borg-Warner Corp.

This summary includes all compressor bodies shipped by the reporting companies regardless of whether they were shipped separately or incorporated into a condensing unit or unitary end-use product (such as a room air conditioner, display case, freezer, or commercial refrigerator). Shipments for export are included. Shipments for household refrigerators are not included.

In order to avoid duplication of reporting, shipment figures were requested only from companies that assembled the machined compressor casting with the components necessary to make a complete compressor or motor-compressor assembly.

BLUEPRINT for LEADERSHIP in commercial and industrial air conditioning

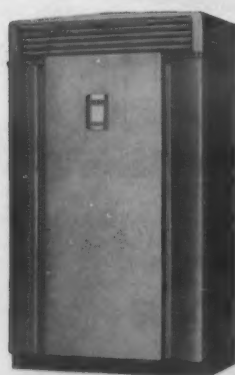
BLUEPRINT for more air conditioning sales for big projects with new 30-ton factory-assembled central station systems.

General Electric dealers are equipped to go after the big projects in a big way. Installation after installation has proved convincingly that large projects can be air conditioned more efficiently at less cost with General Electric Factory-Assembled Central Station Systems—now available in water-cooled self-contained units of 20, 25 and 30 ton capacities.

BLUEPRINT for knocking out competition fast with new air-cooled systems up to 20 tons.

Handsome new General Electric Factory-Matched Air-Cooled Split Systems enable G-E Dealers to capture the big projects where air-cooled equipment is the best answer. No need for "patch-work" installations when large capacity air-cooled systems are required.

BLUEPRINT FOR ALL TYPES OF ZONE-BY-ZONE INSTALLATIONS—THESE FAMOUS GENERAL ELECTRIC UNITS



Self-contained water-cooled floor-mounted units (may be stationed in or away from area served) in capacities ranging from 3 to 15 tons.



Self-contained ceiling-mounted units (take no floor space)—water-cooled in capacities of 3 to 7 1/2 tons—air-cooled in capacities of 3 and 5 tons.



Air-cooled, ceiling-mounted split systems in capacities of 3 to 10 tons.

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2,000 Built-In Units To Air Condition N. Y. Cooperative Apartments

LONG ISLAND CITY, N. Y. —Two new luxury cooperative apartment houses now being built over F. D. Roosevelt Dr. on Manhattan Island will be air conditioned by 2,000 built-in-wall air conditioners made by Lewyt Air Conditioning Corp. here.

Louver grilles of the unit shells will be made to blend in with the brick walls of the "baby skyscrapers" and each air conditioner will be installed through the convactor enclosure that spans the complete wall of each room and forms the window sill.

Lewyt also pointed out that about 1,000 of its through-the-wall units are in use in three other buildings constructed by the contractor.

Admiral Promotes Krauter In Sales

CHICAGO—Walter D. Krauter has been appointed sales manager of the freezer-air conditioner division of Admiral Corp., it was announced recently by James R. Oberly, vice president-appliances.

He succeeds Richard J. Bambery, who was recently promoted to general sales manager for the company.

Krauter started his business career with Gibson Refrigerator Co. where he served in various executive assignments for 24 years. He left Gibson as product manager-general appliance division in 1956 to join Admiral Corp.



W. D. Krauter

Mounting Brackets Ease Installation On King 1/2-Hp. Portable Conditioner

GLENDAL, N. Y.—M. Herbert Koepfel, president of King Refrigerator Corp., announces a new 1/2-hp. portable air conditioner.

The unit, weighing 60 lbs., has simple mounting brackets for easy installation and quick change from room to room, he said. A built-in handle lifts up for convenient carrying.

Specifications include: fan-cool selector switch, washable air filter, 7.5 amp. The unit measures 12 in. high, 16 1/2 in. deep, 16 1/2 in. wide.

Other units in the 1958 series of "Slenderline" air conditioners include 1-hp. 7 1/2-amp., 1-hp. 115-volt, 1-hp. 230-volt, 1 1/2-hp. 115-volt, and 1 1/2-hp. 230-volt models.

Finished in colors to blend



NEW 1958 1/2-hp. portable room air conditioner made by King Refrigerator Corp. weighs 60 lbs.

with any decor, the 16 1/2-in. slim King unit can be mounted in upper or lower sash of double-hung windows, flush with wall; in casement windows; all inside or all outside with windows operating; and through-the-wall, flush inside or outside,

according to the manufacturer. Most models are controlled by pushbuttons and a separate thermostat provides automatic temperature control, it was explained.

Distribution of the King line will be through appliance distributors and dealers. In addition, the company has a contract department for other appliance manufacturers, syndicate buyers, and housing and building contractors, Koepfel indicated.

The following data on the line was announced by the King firm:

King Model No.	Hp.	Volts	Amps.	Cap. B.t.u.
SL115-75	1	115	7.5	8,000
SL1115	...	115
SL1208	1	208	12.0	9,200
SL1230	...	230
SL1000	...	230
SL1001	1	208	7.0	11,000
SL15-115	1 1/2	115	12.0	11,000
SL15-230	1 1/2	230	10.5	15,000
PO-58	1/2	115	7.5	4,000

Cory, Mitchell Postpone Attempt To Recover Taxes

CHICAGO — By agreement, trial has been postponed to March 17 on suits filed by Cory Corp. and its subsidiary, Mitchell Mfg. Co., against a former District Director of Internal Revenue seeking token recoveries on excise tax payments.

Cory and Mitchell contend that a 1954 ruling by the Commissioner of Internal Revenue held that self-contained, window-type air conditioners with 1 or more horsepower motor-driven compressors were not subject to tax.

In his answer, former District Director of Internal Revenue Ernest J. Sauber admits this ruling but claims that Cory and Mitchell units were under 1 hp.

In Dayton Utility Area: Room Unit Sales Sag In '57

DAYTON—Room air conditioner sales in the 20-county area served by Dayton Power & Light Co. sagged to 2,013 last year from the 2,396 the year before, it was reported.

Refrigerators also dropped off to 11,492 sales compared to the 12,039 of 1956. Electric ranges dipped to 6,750 from 7,169 and clothes dryers slipped to 9,459 from 9,657 for the same periods.

West Penn Area

Up Room Unit Sales 2 1/2 Times In Jan. over '56

GREENSBURG, Pa.—Dealers' room air conditioner sales during January in the area served by West Penn Power Co. jumped 2 1/2 times over the like 1957 month, the utility reported.

There were 26 room units sold during the month as compared with the 10 sold in the like period a year ago.

Catalogs Controls

GOSHEN, Ind.—Penn Controls, Inc. announced that its 1958 condensed catalog of heating and air conditioning controls is available upon request.

The catalog (1508-AE) contains several new listings, including the Series 872X, line voltage heating and cooling thermostats; a triple function hot water control.

SPECIFY • INSTALL

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LIQUID • SUCTION • HOT GAS
BRINE • WATER • STEAM • AIR

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High precision standards. Positive closing with pressure-tested seating for positive shut-off • Wide variety of types, sizes, connections.

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Dealers Are Made, Not Born

Distributor Reveals How He Upgrades Small Dealers To Increase Their Air Conditioning Sales—and His

By C. Dale Mericle

CLEVELAND—Starting with the philosophy that "dealers are made, not born," Refrigeration Sales Corp. here has found consistent success in its policy of upgrading air conditioning and refrigeration dealers.

Existing Dealers Improve Sales

Number of dealers served by this firm, a Carrier distributorship, has been gradually increasing, but the company's over-all sales increase has been not so much due to the addition of dealers as it has been to the improved sales of its existing

dealers, points out Warren W. Farr, president.

In trying to upgrade its dealers Refrigeration Sales Corp. places special emphasis on (1) the general problem of developing a small dealer into a sound businessman, and (2) projecting sales a year in advance.

'Our Job Is To Make Sound Businessmen'

This does not mean that the technical and service education of the small dealer is ignored, because the distributorship conducts frequent schools for this purpose, but "primarily our job

is to make sound businessmen out of the small servicing dealers who we expect to grow with us."

Farr has found that individuals with a background of refrigeration and air conditioning service experience or sheet metal work who really want to be dealers usually become good dealers.

"There's no shortage of these smaller boys, and if you want to keep pace with the expansion of the air conditioning industry, you'd better have a good 'farm' of smaller dealers coming up," Farr suggests.

A fundamental problem faced

by the small dealer (or any size and type of business, for that matter) is adequate financing. As others have suggested in the past, Farr urges the dealer to get acquainted with his bank with the primary aim of borrowing money to help the business grow, but here Farr has some specific approaches to offer.

"If the dealer looks to the manufacturer for financing, he loses a good deal of the flexibility he must have to be a successful contractor," he says.

"If the dealer doesn't do business with his local bank, his growth will be limited. This is not only a matter of financing,"

What are the elements of "good management" for the air conditioning and refrigeration and heating dealer or contractor?

There are many elements that go into "good management" for this kind of a business, but it would seem that the three principle ones would be (1) the development of the kind of salespower that will develop enough sales volume to operate the company profitably and promote expansion; (2) proper control of expenditures and services to insure an adequate profit; (3) proper direction and handling of personnel to promote growth in the business and retention of good personnel.

In this series of articles the NEWS has drawn from a variety of sources to present some of the best current thinking on some specific elements that make for success.

Farr emphasizes, "but the fact that the local bank is usually a clearing house for all sorts of information can be helpful for the dealer."

When first approaching a banker probably one of the poorest things a dealer can do is just to offer him a financial statement of his business, according to Farr.

"Bankers apparently are trained to pick holes in financial statements," he says. "Bankers are experts at this and can usually find something wrong with any financial statement."

'Be Armed with Facts, Figures'

Instead, the dealer should be armed with facts and figures about his own business so that he, not the banker, is the expert.

"Show the banker a list of the firms or people you've done business with," Farr advises dealers. "It could very well be that this list will include 10 or 20 of the 'best names' in the community—something that will impress the banker and serve as good references."

Other facts the dealer should show his banker include:

1. Monthly cash position for as many years as possible.
2. Monthly inventory.
3. Notes payable.
4. Accounts receivable.
5. Net worth.
6. Sales by month for as many years as possible.
7. Net profit.
8. Number of service calls by month for as many years as possible.
9. Projected sales for the next 12 months.

"It's not too complicated to get and keep these records, and the dealer who wants to become a good businessman should have them," Farr believes.

Farr's own company incidentally, has all the above data and much more for several years back.

'Can't Argue with Service Call Record'

"The banker who might question expenses, for example, as listed on a financial statement can't argue with your record of service calls or how much business you do in a given month. In this case you're the expert on your own business, and the banker has to take your word for it. Also, he'll be favorably impressed by your knowledge of your own business operations."

(Continued on next page)

ARE YOU WORKING HARD (AND NOT BUILDING A BANK ACCOUNT?)

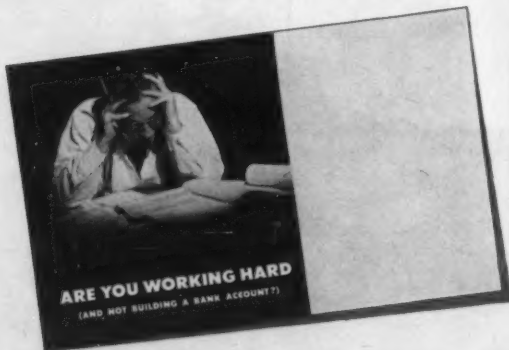
No matter how many times you multiply zero, the answer is still zero. Likewise, no matter how many sales you make, if you don't make a profit on each sale, you'll never build a bank account.

If price competition (and often on the same make you handle) is squeezing the profits out of your sales, you'll surely want to investigate the remedy offered by Stewart-Warner. Here is an organization of integrity and stability which equips you in every detail for a money-making operation.

The fact that Stewart-Warner offers a complete "One Source" line of heating and cooling equipment on an exclusive franchise basis is only

one of the many advantages. The fact that this equipment can be demonstrated to be outstandingly superior in quality is also only part of the story. These facts are converted into profits by sales and installation methods developed by Stewart-Warner—sales ideas which lift you out of the price competition rut—installation knowledge which allows you to keep your profit. You can get a fair price and make a profit with Stewart-Warner heating and air conditioning equipment.

There's no obligation in getting all the details. Write today—ask for a complete explanation of the Stewart-Warner Franchise.



This folder will give you a clear visualization of the many outstanding advantages of the Stewart-Warner Franchise and why it offers a proved formula for a successful heating and cooling business. Write for your copy today.

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All of above trade names are the property of Stewart-Warner Corporation

Upgrading Small Dealer--

(Continued from preceding page)

Regarding the "notes payable" item, Farr reminds dealers that bankers don't put much significance on time payments on a truck, say, but the record on straight loans is something else. Therefore, the dealer should try to establish a credit record by borrowing money from the bank whether he needs it immediately or not because sooner or later the dealer will have to borrow money if he is to expand his business.

'Getting Started With Bank Tough'

"Getting started with a bank is really tough," Farr admits, "but once you get started it's okay. Eventually," he adds, "the bank will probably want a financial statement from you in addition to all the above data, but by then it's just incidental."

The item listed as No. 9 above—projected sales for the next 12 months—represents an important phase of both dealer and distributor operation, in Farr's opinion. This goes much farther than simply setting up an over-all sales quota for the year. Instead, it establishes month by month estimates of the business to be done in the coming year based on past performance.

'Can Accurately Project Business'

"It's fabulous how accurate you can be in projecting business a year ahead," Farr declares.

Such planning has to be realistic, of course, and while "in the average business it would be foolish to talk of doubling or tripling your business in a single year, that's not so in the rapidly expanding air conditioning field," he contends.

Both the distributor and dealer must plan ahead carefully to achieve such goals, however. If they agree the dealer could logically double his business in the coming year, then it must be determined in advance what the dealer will have to do to achieve this goal.

Before approaching the individual dealers with a proposed quota or sales plan for the coming year, the distributor's salesmen are checked for their estimates of what each dealer should be expected to sell.

'Cautious In Setting Quotas'

"We've got a lot of reason to be cautious in setting up quotas for dealers," Farr remarks here.

Obviously, over-optimistic estimates of what its dealer organization will sell in the coming year could very well boomerang on the distributorship in terms of heavy inventories at the close of the season either in the hands of the dealers or the distributor's warehouse.

In working up these estimates and, more importantly, in discussing them with the dealers, Refrigeration Sales Corp. likes to think in terms of units rather than dollar volume.

There's good psychology in this approach. If the small dealer who purchased \$5,000 worth of equipment from the distributor during the past year is told that he ought to be able to handle \$10,000 worth in the next season, that \$5,000 in-

crease will loom pretty large in his eyes. But if he's told that with proper planning he could sell 20 units next year instead of 10, that comparatively slight figure of just 10 (units) seems much more reasonable than the figure of 5,000 (dollars) even though the net result will be the same.

Breaking down the over-all annual sales projection by month is extremely helpful to both the dealer and the distributor, Farr also contends. This is the most practical way to keep close track of how the business is going. If the dealer (or distributor) waits until the end of the year, say, or even the first quarter to determine where his sales are in relation to his quota, it may then be too late, in all likelihood, to take measures to reverse the trend if his sales are less than expected.

Monthly Breakdown of Sales (%) Guides Distributor, Dealer

	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1952	4	5	5	4	3	9	7	21	18	8	8	8
1953	4	8	5	4	5	12	11	13	14	7	11	5
1954	8	6	4	5	4	12	14	17	12	4	8	6
1955	5	4	3	3	7	8	9	15	13	15	9	9
1956	6	5	4	3	5	9	12	18	17	7	6	8
1957												
Quota	5.5	4.5	3.5	3	6	8	11	16.5	15	11	7.5	8.5
1957												
Sales	4.8	3.5	3.8	5.2	5.2	12.1	14.2	16	9.8	9.3	6.7	9.4

But if at the end of the first month the dealer observes that sales are running behind what they should be, he can start analyzing the problem immediately and probably take corrective measures.

Projecting sales a year in advance on a month-by-month basis isn't easy when starting from scratch, of course, but it isn't difficult to do if good records have been kept in the past. Shown in an accompanying table is Refrigeration Sales Corp.'s breakdown of the percentage of business its whole-

sale division has done by month for the past six years—1952 through 1957—and the quota it had set up for 1957. (This firm's fiscal year runs from Nov. 1 through Oct. 31.)

Essentially, each year's monthly quota is arrived at by averaging out the percentages for the previous years. A certain amount of weighting of these figures may be necessary, however, to allow for added stimulants to sales such as prize campaigns or extra discounts for advance season purchases. The accompanying table

breaks down this distributor's annual sales by month in terms of percentages.

Say, for example, a particular dealer had figured on selling three furnaces in November but actually sold only one. He can immediately start analyzing the reasons why sales were short of expectations.

Perhaps he'll decide he should increase or change his promotion efforts.

Here Refrigeration Sales Corp. provides help and guidance for its dealers by arrangement. (Concluded on next page)

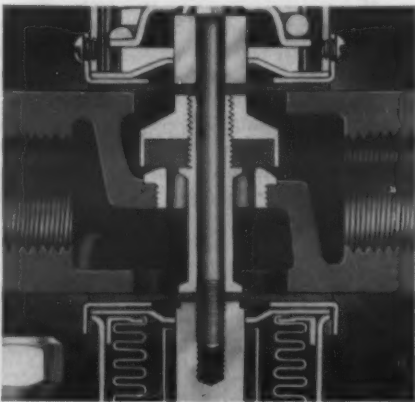
FOR BOTH R-12 and R-22

Use only one water valve

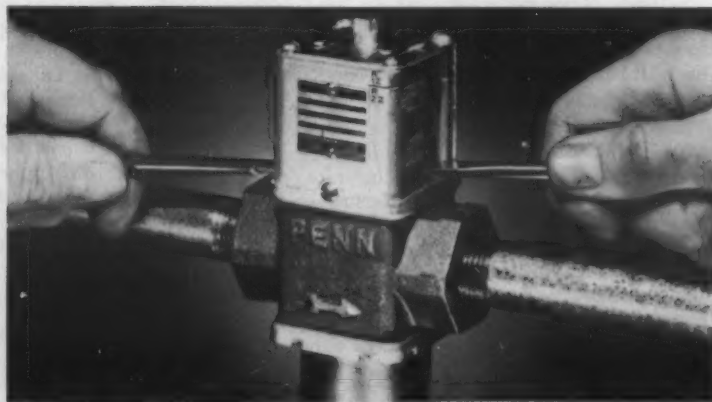
Penn "All-Range" Water Valve Reduces Your Inventory



Easy to adjust with service wrench, not with fingers, thus tampering with adjustment by user is discouraged.



No rust, corrosion and sedimentation. Exclusive design keeps water away from bellows, range spring and sliding parts.



Easy manual flushing after installation . . . 2 screwdrivers, an upward lift and foreign matter is washed away to assure proper valve seating.

Now, cut your water valve inventory in half! Stock only one model . . . the new Penn 246 "All-Range" water valve . . . it's perfect for both R-12 and R-22 service.

This new model has all the superior features of the Penn 246 . . . no valve chatter; no water hammer; no corrosion of sliding parts; easy manual flushing; highly sensitive yet accurate . . . all features which make it stay on the job longer! Available in 3/8", 1/2" and 3/4" sizes.

Ask your wholesaler for Penn . . . the refrigeration industry's favorite water valve.

PENN CONTROLS, INC. Goshen, Indiana
EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N. Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Upgrading Small Dealer--

(Concluded from preceding page) ing advertising campaigns, mostly direct mail, for them. The distributorship has on its staff a part-time advertising man who not only maps out advertising programs for dealers, but sees that they're carried out on schedule.

The latter problem, almost everyone will agree, is where the average small businessman is apt to fall down. He rarely can afford the personnel required to see that direct mail is sent out when it should be, and if he alone is responsible for it, the program will probably "get lost in the shuffle" sooner or later. By taking advantage of the service offered by the distributor, however, the dealer can be assured the job will be accomplished on time

at only a slight expense.

Success of this distributor's efforts to upgrade his dealers by such measures as helping organize and conduct advertising campaigns, etc., is best illustrated by sales figures from the company's books.

In 1957, for example, the number of dealers buying more than \$20,000 worth of equipment is almost doubled over 1956.

More significant, perhaps, is the comparison of dealer purchases in the upper brackets. The number of dealers buying over \$75,000 is up 100%, those buying over \$50,000 is up 50%, and the over \$30,000 category is up 50%.

The "farm system" would seem to be paying off for both distributor and dealers.

Inside Dope

By GEORGE
F. TAUBENECK

(Concluded from Page 1, Col. 1)

To back up his theory, Prof. Parkinson cites amazing statistics from British Admiralty records. Example: H.M.S. Navy officials zoomed 78% in a 10-year period even though the number of capital ships in commission dropped 68%.

Another sad example of Parkinson's Law is the growth of the U. S. International Cooperation Administration. While spending by this dispenser of our foreign aid tax dollars has declined nearly 50% since 1953, the number of its employees has doubled.

Parkinson offers two "almost axiomatic" statements:

(1) "An administrative as-

sistant wants to multiply subordinates, not rivals," and

(2) "Officials make work for one another."

To illustrate, Official A believes himself to be overworked. He will not hire an Official B to take over part of his work, as that would make B a rival for promotion to W's position, when W retires.

So Official A appoints two new assistants, C and D, to share the work he abandons. That makes Official A more important, he hopes—while putting more squares into the organizational chart.

Dividing the work between C and D also means that A is the only one who knows the whole job. Thus he assures himself of taking W's place eventually.

Soon C and D each will add two or more subordinates, for similar reasons. Then seven

men will be doing the work which one formerly did.

In the meantime, manager A will be working harder than ever, and digging an early grave. Late in the gathering dusk, completely fatigued, he will leave his office to catch the last commuter train.

With bowed shoulders and a wry smile, he will reflect that "late hours, like gray hairs, are among the penalties of success."

Parkinson bravely enters other unexplored areas of management. "Everyone knows that the importance of an official is assessed by the number of doors to be passed, the number of personal assistants, the number of telephone receivers, and the depth of the carpet in his office," he observes.

Parkinson discovers further that the same measurement applies to business institutions, in reverse. Lively and profitable airports, for example, thrive in shabby and makeshift surroundings.

Highest-profit American enterprises (like, say, small tool-and-die shops) are conducted from unimpressive offices.

"Perfection of planned layout is achieved only by institutions on the point of collapse," Parkinson decrees. "During exciting discovery or progress, there is no time to plan a perfect headquarters office. That comes later, after all the important work is done."

"Perfection is finality, and finality is death."

Air Conditioned Schools

"The Governor of Georgia has an air conditioned office where he can consult, unwhipped by the heat, with distinguished statesmen who manage the affairs of his great state," observes a Fayetteville observer.

But when you air condition a school where children are trying to learn to read and write, and trying to learn something about chemistry and physics, with the hope that they will grow up to give this country the technical brains that it is woefully short in today—then we tranquilize while the Russians drive for conquest through the awesome avenues of scientific education, the Georgia critic adds.

We cannot go along with this line of reasoning. We believe it contains non sequitur after non sequitur.

If it is important that we turn out better educated graduates from our high schools, is it not important that we give them comfortable conditions under which to learn?

And what non-air conditioned Southern school is comfortable in early September or late May?

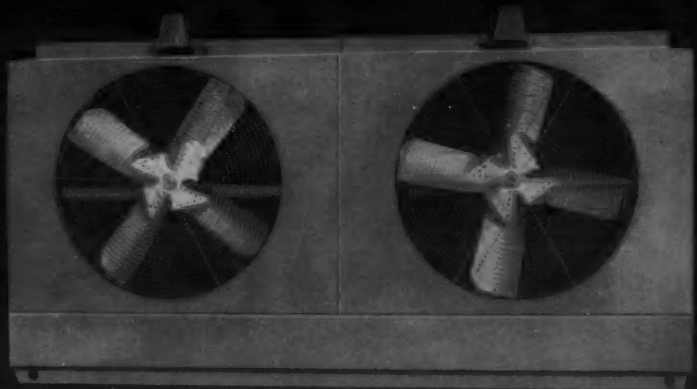
In September and May air conditioning can add three months to available teaching time, thereby permitting teachers to be employed on an annual, rather than a nine-month basis—putting more pay in their pockets, making the profession more attractive, and doing all this while reducing the demand for new school buildings by 33%.

Perhaps the great State of Georgia does not have a school house shortage, but the great State of North Carolina has one.

Which is cheaper: to install air conditioning or to build new school houses?

HALSTEAD & MITCHELL ENGINEERS PROVE . . .

A 100-TON COOLING TOWER CAN BE QUIET



HERE ARE TWO, NEW LARGE SIZES ADDED TO HALSTEAD & MITCHELL'S COMPETITIVELY-PRICED EC COOLING TOWER LINE

THE EC LINE. The addition of the 80- and 100-ton capacity towers extends the range of the more-value-per-dollar EC line. All 12 models, 5 to 100 tons, have outstanding features never before offered in this price group.

These include increased corrosion resistance due to rugged, 14-gage steel cabinets (12-gage sumps on the largest sizes)—weatherized by application of Vinsynite, Vinyl Zinc, and Chlorinated Rubber coatings. Exclusively, H&M offers pressure-cured wetted deck surfaces with the industry's only 20-Year Guarantee against rotting or damage due to fungus attack. New, sealed fan bearings are lubricated for life. Gravity-type distributing pans reduce pumping head, and cut down windage losses. Sump water levels are automatically controlled by integral float valves.

QUIET. Large diameter, four-bladed, deep pitch fans are belt-driven at low speeds by special weather and splash-proof motors. The EC-80 and EC-100 are driven at speeds of only 400 and 450 RPM. They're really quiet! Twin fans and drives power the three largest sizes, and all fans are of zinc plated, chromate dipped mild steel.

EC Series Cooling Towers are available in capacities of 5 thru 100 tons in standard, factory assembled models, or as Take-Aparts (ECK Series) for difficult-to-get-at installations. Residential, direct-drive ECD Series, with all the custom features and also competitively priced, come in capacities of 2 thru 7½ tons. Call your nearest Halstead & Mitchell wholesaler for delivery and prices or write: Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.

WRITE FOR COMPLETE DETAILS



Sealed Unit Parts New Plant To Be Divided Into 4 Departments

NEW YORK CITY—The new, ultramodern Sealed Unit Parts Co., Inc. plant at 1178 E. 180th St. in the Bronx Borough here is expected to be in operation by April, according to Henry Ehrens, president.

A total of 25,000 sq. ft. divided into two levels will have the following departments:

Manufacturing of replacement parts. These parts are sold through jobbers for the rebuilding industry.

Assembly of complete refrigeration cycles for vending machine manufacturers.

Rebuilding of room and home air conditioning units for manufacturers.

Rebuilding of complete refrigeration cycles and high sides for vending machine operators, ice cream companies, and local service shops.

"The largest work area will be devoted to the rebuilding of hermetically-sealed power units for manufacturers and jobbers throughout the country," it was explained. "The latest development in chemicals will be incorporated with custom designed

machinery to clean hermetic burnouts automatically. The most advanced methods of dehydration, testing, and paint dipping will be used.

"Hermetic domes will travel approximately 800 ft. through seven departments on mechanical conveyors enabling us to rebuild over 1,000 hermetic burnouts per week.

"An area of 1,000 sq. ft. will be set aside for the 'Commercial Department.' Facilities for analytical teardown and rebuilding of large tonnage hermetic units will be available. Since this operation requires special work jigs and fixtures made to manufacturers' specifications, we cannot complete this section until such contracts are made."

At Northwestern U

NARDA Sets March 26-28 Date for '58 Dealers, Service Management School

CHICAGO—National Appliance & Radio-TV Dealers Association has announced its 1958 service management school for representatives of member stores will be held at Northwestern university March 26-28 on the Chicago campus.

The school will be devoted to helping dealers and service managers find new and better ways to operate service departments. Tuition cost of the school is \$75, which includes housing at the Lawson YMCA "or its equivalent."

Bull sessions will be held on Wednesday and Thursday nights, March 26-27, in the east dining room on the second floor

of Abbott hall on the Chicago Ave. campus.

Basic curriculum of the service management school is: Wednesday, discussion of "Opportunities of a Service Manager," "Human Relations," "Let's Lend a Helping Hand," "Merchandising Service and Accessories," "Finding, Testing, and Hiring Servicemen," "Effective Routing, Supervision, and Control for Service Managers," and "Service Meetings Pay Big Dividends."

Thursday: "Plan Your Work, Work for Your Plan," "Etiquette for Servicemen," "Buying and Inventory Control," "How To Handle Customers,"

and a panel discussion on business forms.

Late that afternoon an appliance service class will cover appliance reconditioning, "How to Deliver the Goods," electronic service, and hi-fi service techniques.

Friday: "There's Profit in Service Contracts," "Let's Recognize the Serviceman," "Motivating Servicemen," and "What Makes a Successful Service Manager."

N. Carolina Sets Refrigeration Contractor's License Exam Date

RALEIGH, N. C.—Regular examination to qualify for a refrigeration contractor's license will be given here April 2 by the North Carolina State Board of Refrigeration Examiners, announces James A. Dean, executive secretary. Applications must be in by March 25.

Metals & Controls Ups Wilson To Sales Chief

ATTLEBORO, Mass. — John F. Wilson, general manager of marketing for Metals & Controls Corp., was elected vice president in charge of sales at a recent meeting of the board of directors. Carroll Wilson, president, has announced.

In March 1957, J. F. Wilson joined Metals & Controls, manufacturer of the Spencer Thermostat Div. line of "Klixon" electrical controls, relays, and switches, and General Plate Div. clad industrial and precious metals.

He was previously general sales manager of the Cleveland Welding Div. of American Machine & Foundry Co.

Wilson has a B.S. in mechanical engineering from the University of Maine and a master's degree in business administration from M. I. T., which he attended as an Alfred P. Sloan Fellow in 1940-41.

Calif. Revokes Plumbing Contractor's License After Felony Conviction

SACRAMENTO, Calif. — A new law enacted by the 1957 legislature was applied to revoke the plumbing contractors' state license of Sidney Blinder, an individual doing business as Soft Water Equipment & Service Co., Los Angeles.

Blinder was convicted of a felony July 12, 1957, in Superior Court, San Bernardino, in connection with his contracting activities.

The new law makes conviction of a felony in connections with operations of a licensee as a contractor cause for disciplinary action by the contractors' state license board.

THESE IMPERIAL TIME-SAVERS TRIM COSTS OF CUTTING, FLARING AND BENDING TUBING... TRY 'EM ON YOUR NEXT JOB!

A Bends hard or soft tubing. Open-side design. Accurate bends, any angle to 180°. Calibrated. No. 364-FH "Blue Dot" tube bender. Sizes: 1/8" to 3/4" O.D. tubing. Individual benders for each tubing size.

B Spare cutting wheel included at no extra cost with this tube cutter. Exclusive! Fits behind retractable reamer—ready for emergencies. Free-wheeling, ball-bearing action. No. 274-F Hi-Duty tube cutter. For 1/8" to 1" O.D. tubing.

C Adjust-a-matic tube cutter for sizes 3/4" to 2 1/4" O.D. Quick slide-to-size ratchet adjustment. Quick ratchet release. Ask for No. 206-F.

D Automatic burnishing action! Rolls flares in the air. Hard chrome finished cone. No. 500-F flaring tool flares and burnishes 3/8", 1/2", 5/8", 3/4", 1", 1 1/4" O.D. tubing.

E Flares 9 sizes of tubing. Precision gauge assures proper size of flare. Hard chrome finished cone. No. 900-F (45°) for 1/8", 1/4", 3/8", 1/2", 5/8", 3/4", 1", 1 1/4" O.D. tubing.

Imperial offers you the world's most complete line of tube-working tools with more work-saving features!

Equip now with Imperial tools to take the "work" out of tube working. Whatever the type of tubing—copper, aluminum, steel or stainless steel—you get more accuracy, speed and work-

ing ease. And customer-pleasing craftsmanship comes easy. Tool up now with Imperial and be first with the latest. Get complete facts on the industry's most complete tubing tool line.

Avoid lost time and grief by replacing labor-wasting tools NOW with years-ahead IMPERIAL tubing tools. See your Imperial wholesaler now, or write for Catalog 3011.

No. 300-F flaring tool for 45° flares. Single lever clamping. Flares 3/16", 1/4", 5/16", 3/8", 1/2", 5/8" O.D. tubing.

No. 140-F test plug—for closing end of tube temporarily. Pressures to 100 pounds.

No. 203-FS flaring tool for larger sizes: 3/4", 1", 1 1/4" O.D. tubing.

No. 384-F sawing vise for cutting tubing 3/16" to 1 1/2" O.D.

No. 270-F Gear-type bender bends any type of tubing.

No. 260-F tube bender combination for 7 sizes: 1/4" to 3/4" O.D.

THE IMPERIAL BRASS MFG. CO.
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IMPERIAL *Emblem of Quality*

They'll
Do It
Every
Time
by
Jimmy
Hatlo



What Are the BASIC Causes Of Disappointing Sales?

TOP EXECUTIVE in our industry recently asked "Dope" for ideas and thought-starters for a speech he was scheduled to deliver. Topic: "What's Holding Back Our Progress?"

Here is a short list of areas in which, as we see it, there is room for improvement. (These thoughts refer to "package items"—refrigeration, air conditioning, heating—sold to the general public.)

(1) Unrealistic, unprofitable pricing.

a. Very best loyal-to-one-brand dealers (too many, at least) don't choose to survive or revive in this dog-eat-dog era. Reason: the game isn't worth the candle because of poor pricing and fire-sale type competition.

b. Profitless manufacturing (again caused by unrealistic pricing policies) inhibits engineering research and development.

(2) Shabby treatment of the buying public.

a. Bum installations.

b. Shoddy, overexpensive, and even unavailable service.

(3) Misleading advertising.

a. Overstating the capacity of an air conditioning unit (dishonest labelling).

b. Consumer advertising which is so far off the track that prospects are ridiculing it.

(4) Unimaginative designing.

a. Failure to use imaginative styling either to hasten obsolescence or excite moribund feminine interest—in residential air conditioning, for one example.

b. Failure to utilize startling new scientific advances in physics and chemistry to leapfrog old designing problems.

c. In the case of residential air conditioning, not enough engineering in the product—hence, overcostly engineering in the "field" (installation and service).

(5) Lack of salesmanship and showmanship at the retail level.

On this latter subject the NEWS will have something to say in 1958. One editorial theme will be: "Dress Up to Sell Up." Another such theme: "He Profits Most Who Serves Best."

Have you renewed your subscription for 1958?

Panel Heating Shows Promise

FAST-GROWING element of our industry—baseboard panel electric heating equipment—now is installed in more than 500,000 American homes. Wide choices of such resistance heating units are available, and they can be adapted to fit every specific need in any room.

There are two methods of heating homes electrically.

Number one: Radiant heat warms people and canine or feline pets directly, in the same manner as the sun heats and tans sunbathers. At the same time radiant heating warms furniture and carpeting (as well as the air) to the great satisfaction of cold-foot housewives and cold-posterior breadwinners.

Second method: Circulating air over electrically heated surfaces (contained in a suitable enclosure) is known as convection heat. Small portable convection units for supplementary heating (say, in bathrooms) utilize this latter method.

In addition, panel equipment (either surface or recessed) can be used to supplement existing heating systems, or as a complete system in itself. Inconspicuous electric baseboard units—some of which are

available with convenience outlet sections and thermostatic controls—are added starters.

Designed primarily for new homes, ceiling-installed units (with hidden cables barely visible) obviously are attractive to decorators.

In panel-type electric home heating, each room is controllable temperaturewise. Unoccupied rooms may be kept at lower temperatures than the lived-in area—or left unheated altogether—thus saving on operating costs.

Inasmuch as no combustible fuels are used, electric home heating is clean. There are no chimneys, air ducts, or piping to clean or repair.

Furthermore, there is no worry about fuel deliveries, no need to wait for pipes and radiators to warm up, no hot surfaces to bother children or dogs.

Combustion, fumes, and odors are non-existent.

Initial cost of electric heating may be comparatively high, but operating costs could be appreciably less than other systems. Let's get interested, subscribers!

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AIR CONDITIONING
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'The Conscience of the Industry'

Published Every Monday by BUSINESS NEWS PUBLISHING CO., 450 W. Fort St., Detroit 26, Mich. Telephone Woodward 2-0924. Subscription Rates: U. S. and Possessions and Canada: \$6.00 per year; 2 years, \$9.00; 3 years, \$12.00. All other countries: \$10 per year. Single copy price, 40 cents. Ten or more copies, 30 cents; 50 or more copies, 20 cents each. Send remittance with order.

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VOLUME 83, No. 11, SERIAL No. 1,512, MARCH 17, 1958

"A newspaper conducted on the true and natural principles of such a publication ought to be the register of the times, and faithful recorder of every species of intelligence. It ought not to be engrossed by any particular object, but, like a well-covered table, it should contain something suited to every palate."—John Walker.



READER QUESTIONS MANUFACTURER'S CLAIMS

Hollander & Co., Inc.
St. Louis 8, Mo.

Editor:

Reference is made to the article entitled "Norge Features Ice Cube Maker to Deliver, Store Automatically," in the Feb. 17, 1958 issue of AIR CONDITIONING & REFRIGERATION NEWS.

There are two statements in this article that are absolutely false and misleading.

This refrigerator is definitely not automatic. Water must be manually poured into the freezing compartment with a special container provided with the refrigerator. When these cubes are made more water must be added.

Secondly, you state: "Norge claims that this is the first time that automatic ice making and delivery is incorporated in an electric refrigerator." Now then, you surely must remember that Servel manufactured a gas and electric refrigerator that made ice cubes and delivered ice cubes completely automatically in every sense of the word. I have one of these electric Servel's in my own home.

I am certain that Mr. Sayre would like the public to believe they were the first.

We are subscribers to your fine publication. I hope in the future you will check into manufacturers' claims a bit more carefully.

STUART HOLLANDER

Handy Way to Subscribe

To See the Industry In Action EVERY WEEK

Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on commercial and residential air conditioning, heating, commercial and home refrigeration: manufacturing, contracting, distributing, retailing, and servicing. Read the industry's newspaper for profit every week. Only \$6.00 per year, 53 issues (U.S. and Canada). Foreign: \$10.00 per year.

AIR CONDITIONING & REFRIGERATION NEWS

3-17-58

450 W. Fort St., Detroit 26, Mich.

Send the NEWS every week for: ☐ One Year \$6. ☐ Three Years \$12.
☐ Payment Enclosed ☐ Bill Me ☐ Bill Company

Name.....

Company.....

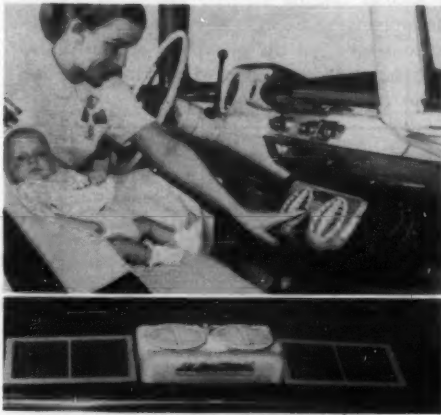
Street.....

City..... Zone..... State.....

IMPORTANT: Company's Type of Business.....

Can Be Dealer-Installed in 4 Hours

Underdash Auto Air Conditioner Fits 59 Models, Makes of Cars, '52 to '58



NEW 1958 low-cost "Frigiking" 58-UD underdash auto air conditioner made by Frigikar Corp. fits 59 automobile makes and models, 1952 through 1958 inclusive. It can be dealer-installed in four hours.

NEW departure in back-package-tray refrigerated auto air conditioning has been announced by Frigikar. Model 58-BPT reverses the usual air movement pattern of back-car installations.

DALLAS—A 1958 underdash auto air conditioner of styling giving it the appearance of being part of any of 59 different makes and models of cars, 1952 through 1958 inclusive, has been announced here by Frigikar Corp.

Model 58-UD features high-capacity, quickly-refrigerated cooling which starts instantly, changing air every 30 seconds in the average car, according to Bert J. Mitchell, firm president. Unit can be dealer-installed in less than four hours in the average auto, station wagon, or convertible, it was stated.

'Drops Temperature to Low 70's in Minutes'

In southwestern desert test runs, Mitchell said, the '58 "Frigiking" dropped 110° in station-wagon temperatures to the low 70's in minutes, holding this level for hours.

"Since station wagons with two or three times more air space than passenger cars have posed the most serious cooling problem to auto air conditioning makers, these tests provide evidence of the unit's capacity for cooling all cars under severest conditions," Mitchell claims.

Frigiking's all-metal fully-insulated contemporary case fits 2 in. further under the dash for improved appearance and leg room, it was pointed out. Other mechanical improvements claimed: a six-bladed fan to replace earlier four-bladed ones, increasing air movement; new unitized receiver-drier-sight glass assembly with sight glass level indicator.

'Prevents Freeze-Ups'

58-UD's fingertip, pushbutton "MagneTouch" no-draft temperature control prevents freeze-ups, the company maintains. Driver pre-sets, by turning a knob, the temperature level he wishes to maintain. Then, no-draft control disperses a thick layer of cold air beneath the car's roof for its entire length and breadth. If passengers want a direct blast of cold air it may be obtained by rotating air-direction louvers a quarter of a turn, the firm explained.

A new back-package-tray model 58-BPT has also been added to the Frigiking line. This

earlier back-of-car models, Mitchell stated, by shortening the path of air travel from cooling coils to car interior. Cold air now comes directly off cooling coils into the car providing an additional 10-15° cooling capacity, he added. Pushbutton control for this rear unit is on the dash at the driver's fingertips.

2 Units Operate Off Same Compressor

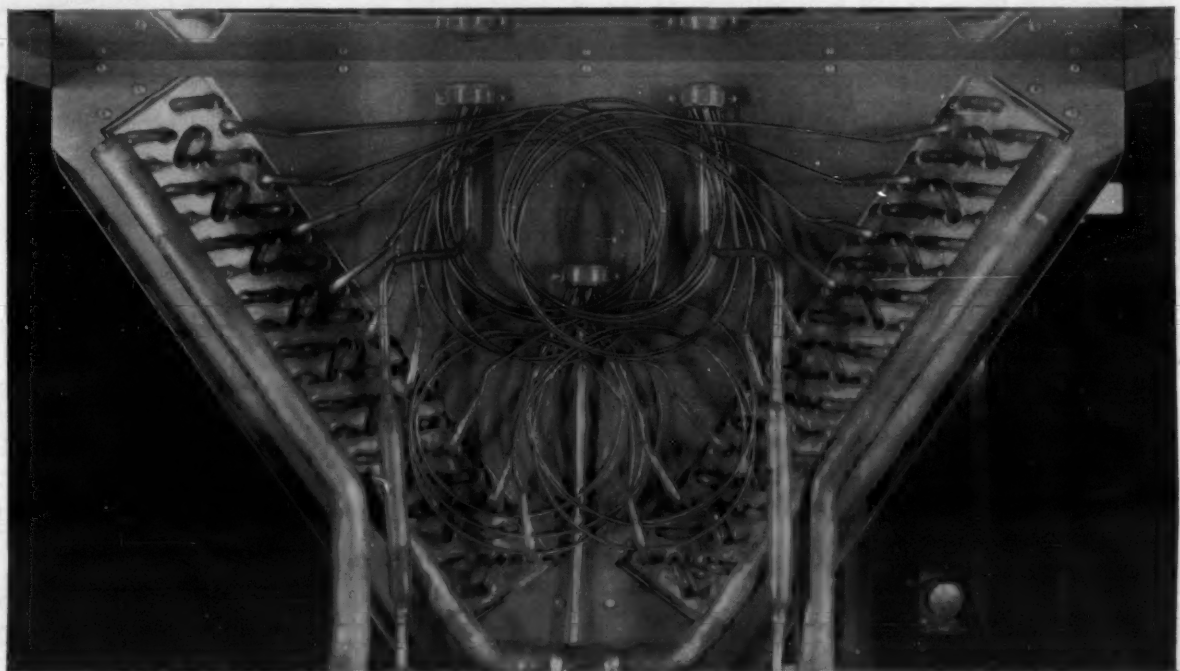
Cooling of large limousines can be accomplished by installing a combination of underdash and back-seat units both operating off the same compressor, it was noted.

Frigikar now has representation in 36 states and many foreign countries. It says it anticipates a 20% increase in 1958 sales to top its 1957 record year. The firm has made auto cooling equipment since 1949.

WHAT... WHEN... WHERE

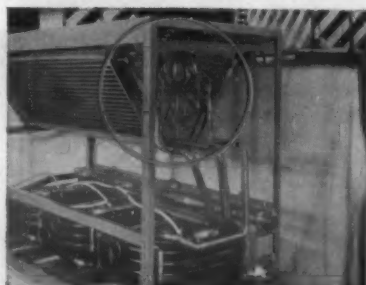
— A Guide to Coming Events of Interest

- Gas Appliance Manufacturers Association Annual Meeting
March 31-April 2,
The Greenbrier, White Sulphur Springs, W. Va.
- Air-Conditioning & Refrigeration Institute Annual Meeting
May 4-7, The Homestead, Hot Springs, Va.
- National Restaurant Association Convention, Exposition
May 5-9, Navy Pier, Chicago.
- Western Air Conditioning, Heating, Ventilating and Refrigeration Exhibit
May 7-11, Shrine Exposition Hall, Los Angeles.
- Edison Electric Institute Annual Convention
June 9-12, Boston.
- Oil Heat Institute of America Convention, Exposition
June 9-13, New York City.
- American Society of Heating & Air-Conditioning Engineers and American Society of Refrigerating Engineers JOINT MEETING
June 23-25, Leamington hotel, Minneapolis.
- National Association of Plumbing Contractors Convention
June 30-July 3, Pan Pacific Auditorium, Los Angeles.



Restrictor tube feed at end of evaporator in a 25-ton York packaged air conditioner. There are three systems, each served by a 7½-hp hermetically sealed compressor unit with a water-cooled condenser—making possible step-start and step-capacity operation.

York uses restrictor tube metering in units up to 25 tons—depends on clean, uniform restrictors



Area circled is location of restrictor tube feed shown in photo above.

RESTRICTOR TUBES, in 38 different combinations of length and diameter, play a vital role in packaged air conditioners produced by York Corp., a subsidiary of Borg-Warner. York pioneered in the air conditioning application of hermetically sealed refrigeration systems, which it uses in units up to 25 tons in cooling capacity. And these systems utilizing restrictor tubes for the metering

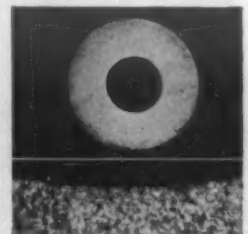
of the refrigerant, eliminating moving control parts, have greatly reduced field service and made possible the 5-year protection plan on all units.

For dependable operation—and for economical manufacturing—York must have restrictor tubes that are clean and uniform, batch after batch. Anaconda restrictor tubes have been consistently meeting these requirements.

Consistently high quality. All Anaconda Restrictor Tubes are plug-drawn to finish. Extreme care is exercised in making the steel plugs, in order to produce a smooth, round inside bore as shown in the cross-section micrographs, right. Every length is chamfered at both ends, inside and out. Each tube is thoroughly washed and blown out, given a final air-flow test, carefully bundled, with ends of each bundle wrapped. Your range of selection is broad, as Anaconda Custom-Made Restrictor Tubes are made in both copper and aluminum, in nominal inside diameters from .025 inch to .090 inch.

Write today on your company letterhead for the free Anaconda Air Flow Slide-Rule Calculator. Address: French Small Tube Division, The American Brass Company, Box 1031, Waterbury 20, Connecticut.

A cross-section of an Anaconda Copper Restrictor Tube, .081" O.D. x .031" I.D., magnified 10X. Note the roundness of the bore.



Section of a micrograph at 200X magnification to show smoothness of the bore.

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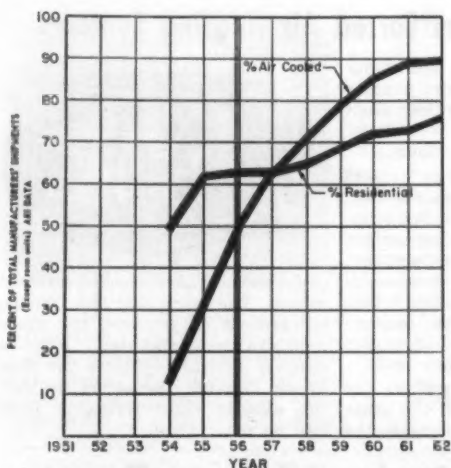


FIG. 8 — Airtemp predicts air-cooled equipment will represent an even greater percentage of manufacturers' shipments in next few years.

Air-Cooled Units --

(Concluded from preceding page)

Many installers have raised questions regarding roof locations of air-cooled condensers. Although this type of job is usually found on commercial buildings, it may be encountered in multi-family residences. Solar radiation will raise the temperature of a roof, particularly a black surfaced roof, to a temperature of 160° or even higher.

To avoid the layer of superheated air thus formed it has sometimes been thought necessary to elevate units several feet above the roof. Careful measurements over both large and small roof areas have shown, however, that a very steep temperature lapse rate exists in the first few inches and that free air temperatures are closely approached within the first foot.

A typical pattern is shown in Fig. 5. From this it can be seen that an 8-in. to 12-in. space between roof and unit is sufficient. The usual precautions should be taken to prevent recirculation where walls or parapets are encountered.

One of the first questions raised regarding air-cooled operation concerned the fact that with any economically feasible condenser size the discharge pressure runs higher and cooling capacity lower than would be so with a water-cooled system using the same compressor and evaporator.

However, this variable capacity of the air-cooled unit together with notions of other concepts such as house flywheel effect, etc., has resulted in some confusion with regard to proper unit sizing.

This topic was discussed by Radle at the 1957 ASRE Air Conditioning Conference. Field test data was presented to show that a workable relationship could be established between air-cooled unit capacity at design conditions, the cooling load calculated by the ARI method and the temperature control expected in the conditioned space. The essence of this, based on results from a number of houses, is shown in Fig. 6.

This indicates that in a house equipped with a normal amount of ductwork (properly insulated if it is exposed to outside temperatures) a load factor of 1.0 is associated with a temperature rise above the thermostat control point of slightly over 3°. As a rule operation in this neighborhood is quite satisfactory.

Decreasing the relative unit size increases the load factor and results in wider tempera-

ture swings. A load factor of over 1.25 will usually be associated with nearly 'round-the-clock operation in design weather and temperature variations of 6° or more.

Several things should be kept in mind in applying this graph:

(1) The load must be calculated for a design day using the industry approved ARI method.

(2) The unit capacity is taken at the outside design conditions.

(3) The answer is given for design weather. In mild weather the control of the space will, of course, be closer.

(4) Owing to the impossibility of accounting for all factors in an ordinary load calculation, plus variations to be expected in evaporator loading, laboratory precision cannot be expected in this sort of thing. It does provide however, a useful quantitative tool to assist the dealer in choosing the proper unit for each situation.

Another topic which is frequently discussed is the operating cost of the residential unit. This problem has been particularly difficult to deal with because it involves, among other things, such unpredictables as

the weather and people.

The magnitude of the people effect was well shown by Gonzalez in a recent article in *Refrigerating Engineering* (January, 1957), "How Power Usage Varies for Summer Air Conditioning of Identical Residences."

Similar differences can occur because of seasonal deviations from the climatic normal.

When the weather and people problem is by-passed, by assuming that the season conforms to the established normal and that the house is maintained at some essentially constant temperature by a fixed thermostat setting, then it is possible, to correlate the remaining factors on the basis of field test data from a number of houses so as to permit a reasonably accurate prediction of the season operating cost.

The results of calculations for a number of cities are shown in map form in Fig. 7. Local costs may be estimated from this by

making proportional corrections for the house load and the prevailing power cost. For this purpose it is necessary that the load be calculated by the ARI method for a 20° design temperature difference. This does not, however, assume that the house is to be operated at this t.d., since the figures are computed for 75° inside and the appropriate normal temperature outside. Caution is necessary where pronounced local climatic variations exist.

Such have been a few features of the first five years with air-cooled residential equipment, as viewed from one seat in the arena. Where will air cooled go from here? Well, if we accept the opinion of the industry, itself, as shown in Fig. 8, as an index, the trend will continue. Residential equipment will account for an increasingly large proportion of total shipments with the percentage of air cooled approaching 100%.



Here is tiny Wolverine Capilator—The tube with built-in control.



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When you specify Wolverine Capilator® for the precision metering of liquids and gases you obtain capillary tubing that is produced exactly to YOUR STATED FLOW REQUIREMENTS. Capilator is controlled to Air-Flow Rates Equivalent to $\pm .0005$ " I.D.

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Next time you order capillary tubing specify Wolverine Capilator—the restrictor tube that can build greater performance into your units. For complete information write for the Wolverine Capilator Catalog.



FOR MORE INFORMATION ON THE PRODUCTS DESCRIBED ON THIS PAGE

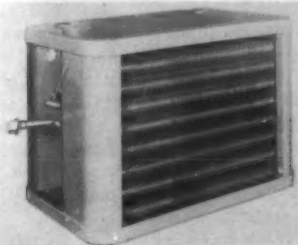
Write Directly to the Company—at the Address Given in the News Item

Unit Cooler Has 2,800 B.t.u.h. Capacity

A new, larger "Two-Way" unit cooler with a capacity of 2,800 B.t.u.h. at 10° T.D. has been announced by McQuay, Inc., Dept. AC&RN, 1600 Broadway St., N.E., Minneapolis 13.

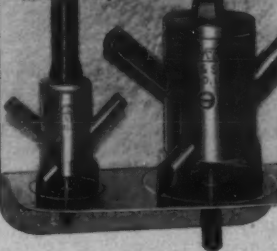
Model TW-280 for "Freon" is constructed with dual side air discharge, and is designed for cooling back bars, reach-ins, and small walk-in refrigerators.

There are five sizes of the Two-Way unit coolers ranging from 800 to 2,800 B.t.u.h.



Adjustable Hole Cutter

No. 2) One handle and lock to hold work steady. No. 4) One handle and lock to hold work steady. Used in 1/2" Press, 1/2" Electric Drill or 1/2" Hand Drill.

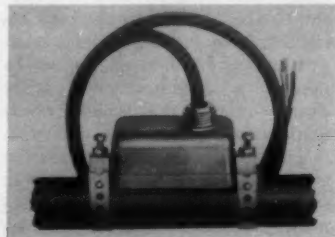


Adjustable Hole Cutters Improved

An improvement has been announced in the adjustable Wyco hole cutters manufactured by Wyzenbeek & Staff, Inc., Dept. AC&RN, 223 N. California Ave., Chicago 12.

The shank which fits the power source has been increased in diameter to give added strength and reduce the possibility of failure due to shock loads.

Made in two sizes, adjustable from 2 1/2 to 4 1/2 in. in diameter, the Wyco hole cutters will cut claimed perfect circles in metal.



Changeover Thermostat Designed for Combinations

New summer-winter changeover thermostat designed for use on combination heating and cooling air conditioning units has been introduced by Barber-Colman Co., Dept. AC&RN, 1300 Rock St., Rockford, Ill.

It will sense the temperature of the supply media and reverse the control action of the room thermostat sensing element to comply with the flow of either hot or chilled water, the company says. It also has applications in process control.

Switch action is single-pole, double-throw snap-acting. It has a non-adjustable control point setting at 70° and a fixed differential

of approximately 15°. Thermostat is factory sealed to prevent condensation from forming on its contacts. It may be mounted in any position and comes equipped with mounting strapped for easy installation.

7-Flavor Vendor Handles 56 Bottles

A new seven-flavor visual selective upright vending machine has received favorable response from the bottling industry, according to the manufacturer, La Crosse Cooler Co., Dept. AC&RN, 2809 Losey Blvd., S., La Crosse, Wis.

The new model visual selective upright, which will be called "Bev-Serv 56," is capable of handling 56 bottles in the seven trays with pre-cooling for 26 more.



Cab Cooler Features Weather Resistant Casing

A new self-powered and self-contained cab cooler with a casing of lightweight, tough, and weather resistant "Fiberglas" reinforced plastic has been introduced by D. W. Onan & Sons, Inc., Dept. AC&RN, 2515 University Ave., S. E., Minneapolis 14.

New unit, called the "KAB Kooler" can be mounted on the roof of truck cabs, delivery trucks, commercial and passenger vehicles, mobile homes, and road equipment with only minor installation work necessary, the firm claims. An auxiliary fuel tank for the 4.1-hp. 4-cycle engine can be mounted on top of the regular gasoline tank.

The self-powered unit has an air-cooled engine and includes a



4.32-cu. in. Onan R-12 compressor. Cooling capacity of the unit is claimed to be sufficient to comfortably air condition an entire passenger trailer when electricity is unavailable.

Chemical Cleans Corroded Aluminum

"Alumatreet" is a chemical formula which cleans corroded aluminum and at the same time creates an absorptive crystal coat. The resulting double action also assures a tight paint lock free from blisters and peeling, thereby increasing the life of the paint coating, claims manufacturer Farrelloy Co., Dept. AC&RN, 1245 N. 26th St., Philadelphia 21.

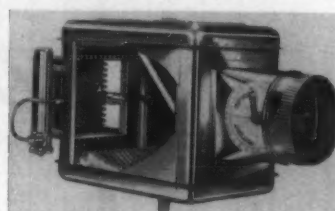
Alumatreet may be used for removing oxide and restoring aluminum casting or other alloys of aluminum. It is claimed to protect the treated surface so it won't permit "corrosion creep."

Humidifier Fits Forced Air Heating Systems

An automatic spray humidifier that fits all forced air heating systems is now available from Lennox Industries, Inc., Dept. AC&RN, Marshalltown, Iowa.

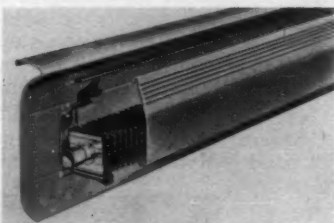
Lennox "Humidispray" will evaporate up to 18 gals. per day, and automatically meter the proper amount of humidity according to the severity of the weather, the firm claims. This feature is accomplished by conducting a flow of warm air from the furnace through a fine spray of water which impinges on a filter pad.

Moisturized air returns to the furnace for mixing with the other warm air and then through the



distribution system to the various rooms. The more heat the furnace is required to produce, the more moisture is evaporated. Also, a manual control regulates the flow of air through the spray so that the exactly right humidity level can be determined.

Has Box-Fin Baseboard Convector Element



A new type of box-fin baseboard convector radiation heating element has been introduced by Spi-

Rol-Fin Corp., Dept. AC&RN, Pompton Plains, N. J.

New box-fin element has a number of claimed advantages in that it is considered stronger—more rugged and has greater resistance to damage through mishandling of product. It is formed by expanding normal tube to press fit an accordion pleated finning. Lengths are therefore easier to cut and solder. In addition, the box-fin gives increased convection surface, the firm said.

Offers All-Nylon Cable Clamps

A new line of all-nylon cable clamps has been announced by Richco Plastic Co., Dept. AC&RN, 4445 W. Fullerton Ave., Chicago 39.

"Zytel 101" nylon resin is the material from which these cable clamps are made. By utilizing the inherent strength, resilience, and flexibility of this material, the manufacturer claims to report savings in installation time over comparable metal clamps. Cutting or shorting out of cable is also avoided because of these properties.

Designed to retain maximum strength, durability, and chemical resistance, these clamps may be safely recommended for service in temperatures as low as -60° F. and as high as 300° F. They are impervious to all kinds of exterior weather conditions as well.

Dehumidifier Can Be Wheeled About

A totally new, electric dehumidifier which provides fully automatic humidity control and embodies a new "Wheel-about" design has been introduced by Mitchell Mfg. Co., Div. of Cory Corp., Dept. AC&RN, 3200 W. Peterson Ave., Chicago 45.

Named the "Imperial Automatic," this new dehumidifier features a fully automatic humidistat.

Packages Propane Gas Torch In Kit

A new, double-value "Bernz-O-Matic" propane gas torch kit packaged in a steel all-purpose carrying case is now being distributed to hardware dealers by the Otto Bernz Co. Inc., Dept. AC&RN, Driving Park at Romona, Rochester 13, N. Y.

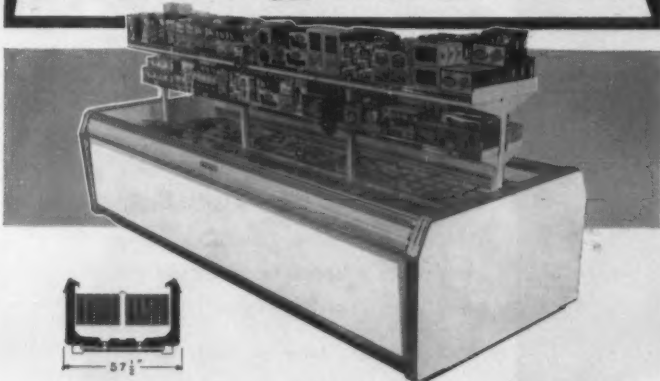
Kit represents a new concept in torch packaging, Bernz said. It has eye appeal, utility. The case contains the torch and all the wanted accessories needed for hundreds of jobs.



ONE REFRIGERATOR WITH THE VARIETY OF TWO!

PROBLEM: Greater variety and adequate capacity

SOLUTION: Warren's new *Twin-Isle** Merchandiser...



Warren's TWIN-ISLE is a revolutionary new merchandiser for displaying ice cream and frozen foods: one refrigerator offering two-side shopping from **two** compartments, each with five frozen-food packs across; 57 1/2" wide over-all. Better merchandising, with twice the variety of a conventional low-temperature display case! What a liberal capacity, too! 2,316 frozen-food packs or 2,160 pints of ice cream. Most economical possible use of floor space and horsepower! No further need for expensive back-to-back case line-ups.

TWIN-ISLE Merchandisers feature Diamond Jubilee styling... COLORAMICS® Bands optional at no extra cost. **Four-shelf merchandising canopies** are offered for further utilization of floor space.

*Patent Pending

Warren Refrigerators

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Introduces Horizontal Blower Evaporator

New Bohn CH model is a horizontal-type blower evaporator, ceiling mounted for air conditioning stores and similar installations, made by Betz Div., Bohn Aluminum & Brass Co., Dept. AC&RN, Danville, Ill.

Cabinet permits mounting directly in the conditioned space or the unit can be remotely mounted and connected to a duct system. Space for steam or hot water coil permits conversion to year-round air conditioning and heating unit.

Capacity is a full-rated 400 c.f.m. per ton. Available in duct or grille models; capacities of 2, 3, 4, 5, and 7½ tons.

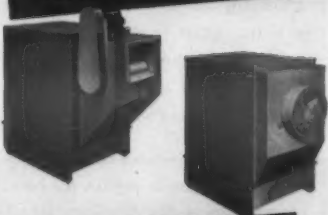
Can Flush-Mount Air Purification Unit

Recently introduced is a new compact self-contained air purification unit designed for flush-mounted installation in a wall made by Barnebey-Cheney Co., Dept. AC&RN, Cassady at Eighth, Columbus 19, Ohio.

Originally intended for use in kitchens, recreation rooms, and lavatories, the "Wall Purifier" is claimed to be versatile and useful in any area where odor and air contamination exist. The purifier performs three air conditioning functions: it refreshes and deodorizes the air, removes air-borne dust, and circulates the air.

Wall Purifier consists essentially of a series arrangements of dust filter, activated charcoal adsorber cell, and an exhaust fan, all compactly housed in a cabinet provided with an attractively finished louvered cover plate. The fan pulls stale or impure air through the dust filter, then through the adsorber cell, and returns clean, odorless air to the room.

LARKIN MEANS EFFICIENT DESIGN....



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All Larkin refrigeration and air conditioning equipment is designed to give peak performance at low operating costs, whatever the requirements. The same organization that produced the original, patented cross-fin coil maintains a constant effort for better, more efficient design. Just one more reason why Larkin leads.

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LARKIN COILS
315 MEMORIAL BL. S.E. - ATLANTA, GA.

Offers Automatically Controlled Humidifier

A new automatically controlled humidifier, the "Humid-i-Maker," has been announced by Armstrong Machine Works, Dept. AC&RN, Three Rivers, Mich.

In the Humid-i-Maker, air is humidified by being blown over the surface of heated water. The water is heated either electrically, by hot water, or by direct low-pressure steam (for commercial or industrial use). This use of heated water gives a capacity as high as 16 pts. of moisture per hour. A

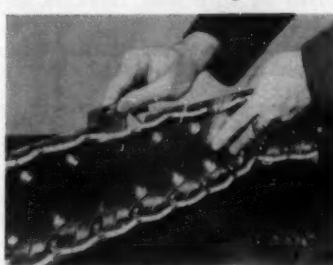


sensitive humidistat automatically controls the operation.

Electric Water Heater Element Developed

New "Heat-Weave" electric water heater element is now used on all Fowler electric water heaters, according to manufacturer Fowler Mfg. Co., Dept. AC&RN, 2545 S.E. Gladstone Ave., Portland 2, Ore.

Heat-Weave is made of "Nichrome V" wire and "Fiberglas," interwoven for heating efficiency, and long-time service. These elements use a new principle.



Low-Temp Chilling Machine Announced

A new 5-cu. ft. low-temperature chilling and refrigeration machine has been introduced by Harris Refrigeration Co., Dept. AC&RN, 308 River St., Cambridge, Mass.

Known as model 5L-2, the new unit is compact, takes 44 by 30-in. of floor space. With its oil separator, oil filter, safety controls, and overload protection, unit is completely automatic and will withstand power failures without high pressure or loss of refrigerant, the firm claims. It automatically resumes operation and returns to normal temperature when current is restored.

Chilling chamber has a free working area of 30 by 18 by 16 in., constructed with double walls of 16-gauge steel, electrically welded,



and finished with a non-corrosive coating of hot-sprayed zinc, it was added.

Cooling Towers Produced with Low Silhouette

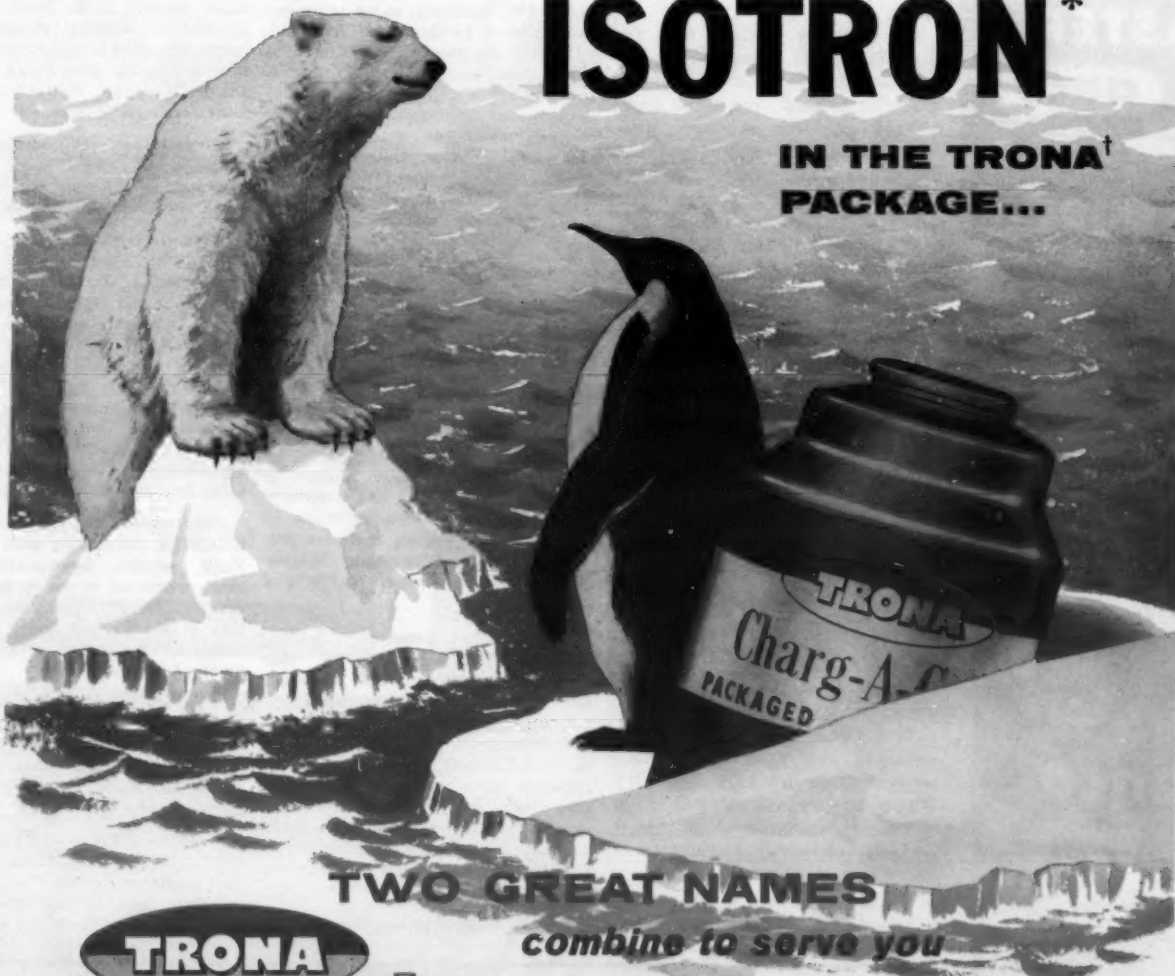
A new series of low silhouette "Lo-Line" cooling towers with capacities ranging upward from 75 tons has been announced by J. F. Pritchard & Co. of California, Dept. AC&RN, 4625 Roanoke

Pkwy., Kansas City 12, Mo. Companion to the redwood framed Lo-Line tower, this new concept in cooling towers features all steel structural members that are hot-dipped galvanized.

What's New in Refrigerants?

ISOTRON*

IN THE TRONA† PACKAGE...



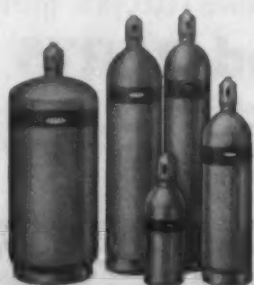
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*"ISOTRON" is Pennsalt's registered trademark for its fluorinated hydrocarbons.
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FIRST with the FULL LINE in disposable CHARG-A-CAN containers and bulk cylinders... ISOTRON-11, ISOTRON-12, ISOTRON-22, ISOTRON-113, ISOTRON-114, METHYL CHLORIDE and SULFUR DIOXIDE.

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TECHNICAL CENTER

By Frank J. Versagi, Technical Editor

Used Driers (6)

The serviceman is naturally not going to have time to run extensive tests on used driers. Nevertheless, he can make use of some fairly simple tests to enable him to determine from the drier the condition of troublesome systems. Or, he can learn to determine quickly if a plugged drier is really defective or merely a symptom of extensive contamination in the unit.

As mentioned earlier, a dime store type magnifying glass is an important tool for this work. Some clean carbon tet or other cleaning solvent and a white saucer or two will enable the serviceman to conduct the necessary visual inspection of plugged filtering elements.

ged filtering elements.

After dismantling the drier, place the used desiccant in a jar or can. Look at the filtering element with the magnifying glass. Sometimes fibers, metal particles, or other foreign solids stand out immediately.

More often, however, the filtering element is matted with solid materials, oil, and sludge—making one brownish-black mass. In this case, scrape some of the sludge off the filtering element into a white cup or saucer. Add enough clean solvent to cover the material and stir it with a pencil or any clean tool.

With an eye dropper take off most of the liquid solvent and transfer it to another saucer and allow it to evaporate. The material in the original dish should now be clean enough to look at with the magnifying glass. If not, cover it with solvent again and repeat the extraction of oil and oily products. Heating the solvent slightly helps.

Oil and oily sludges will, for the most part, dissolve in the solvents, leaving the other solid material behind. With the magnifying glass it is then quite simple to look for and identify the usual contaminants.

Metal Particles: copper is easily identified by its color if it is clean or nearly so. Aluminum particles can usually be differentiated from steel or iron; if there is any doubt, use a magnet. The amount and shape of metallic particles can give a good idea as to their source as explained in a previous article.

Metal Oxides: copper oxide and rust (iron oxide) are not easy to detect because they are usually discolored by the presence of other materials, especially copper and iron salts or compounds. If the sludge is placed in a shot glass and hot water poured over it, the usual salts will dissolve. Any metal or metal oxides will remain undissolved at the bottom of the glass.

Sometimes it is possible to separate red rust from black copper oxide without difficulty. When the colors are dubious, chemical tests are required. General chemical tests will be described in a later article.

Metal Salts: these are really chemical compounds formed by

the reaction between a metal and an acid. If hydrochloric acid, for example, reacted with iron, the resulting metal salt would be iron chloride. Copper salts would normally be blue or green; iron and aluminum salts would be white to yellow. The colors stand out if the sludge is fairly clean after extraction.

Even if the salts are not recognizable by their color, their presence can be determined in general by the fact that they will dissolve in the hot water. If all of the sludge dissolved in the water, for instance, we could be sure that there is no metal or metal oxide in the material. Later we will describe simple chemical tests which will

allow the serviceman to identify the major salts.

Oil matter: If the solvent in the extracted portion of the sludge is allowed to evaporate, what is left will give a good indication of whether clean or dirty oil was passing through the drier. Slightly discolored oil can easily be told apart from carbonized sludge or semi-solid matter. Touch the material and rub it between the fingers. The feel can also help determine if the oil is merely slightly discolored or if it contains hard, solid particles.

The touch test can also help detect the presence of odd items like grit or sand.

(To Be Continued)

assist L. G. UNDERHILL as sales representative covering metropolitan New York City and New Jersey from Trenton north.

Robertshaw-Fulton Controls Co.—Appointment of ALBERT D. UNETIC, previously general sales manager of the Acro Div., as division general manager, has been announced. GEORGE H. GIESLER, engineer, has been upped to sales representative of the Fulton Sylphon Div. to handle sales of products in Nashville, Knoxville, Chattanooga, Tenn. and portions of lower Kentucky and western North Carolina.

Air Conditioning Div., American Standard—ALBERT C. VIETZEN, chief inspector of the Elyria, Ohio plant, has retired after 48 years with the firm. He was honored as the oldest employe in point of service at the plant.

Temco, Inc. (Nashville, Tenn.)—JOHN J. MOSSONG, JR., previously with Aladdin Industries of Nashville, has been named purchasing agent of this gas heating equipment firm.

Men on the Move . . .

Recold Corp.—WALTER L. HILTON has been named western sales manager. He was formerly associated with Thermal Products, Inc., Los Angeles, Recold distributor, and has 22 years' experience in the refrigeration field. He will cover 11 western states plus Canada, Texas, and Oklahoma.

Iron Fireman Mfg. Co.—JACK JORDAN, formerly sales manager for a burner producer in Cleveland, has been appointed assistant to the president. He will work with factory branches and key personnel in developing heating and cooling equipment sales. RICHARD C. WRIGHT, chief engineer, has been elected vice president-engineering, research, and development for heating, power, and cooling.

Trane Co.—JAMES F. HIELD, a sales engineer with the Peoria, Ill. sub-office of Davenport, Iowa office, has been promoted manager in Peoria. ROBERT R. BLACKBURN, Davenport sales engineer, has been named manager there.

Sturtevant Div., Westinghouse Electric Corp.—GEORGE STEINER, district manager of the Pittsburgh office, has been upped to regional manager of the midwestern region with headquarters in Chicago. The region includes Illinois, Indiana, Wisconsin, Minnesota, Iowa, Nebraska, North and South Dakota.

Amana Refrigeration, Inc.—BERNARD M. FRAWLEY, formerly midwestern sales manager for Crosley-Bendix, has been appointed regional sales manager of the Pittsburgh region. WILLIAM E. HOELSHER, for eight years a regional sales manager of Crosley, has been named to the newly-created post of division sales manager to supervise sales activities in Cleveland, Philadelphia, Boston, and Buffalo regions.

Philco Distributors, Inc.—CARL

Krumrei, general manager of the Chicago branch, has been named to the same post in the Los Angeles branch. CHARLES HAKIMIAN, formerly president of Norge Chicago Corp., has been named general manager of the Chicago branch.

Mitchell Mfg. Co., Div. of Cory Corp.—JIM GAYNOR of Gaynor Sales Agency in St. Paul, has been appointed district manager for room air conditioner sales in Minnesota, North and South Dakota, Iowa, Nebraska, Kansas, Missouri, and northern Wisconsin.

York-Detroit Wholesalers, subsidiary of Borg-Warner Corp.—MEL KRAUSE has been named room air conditioner manager.

Airtemp Div., Chrysler Corp.—J. E. PATTERSON, dealer development representative in the southeast zone, has been named national account specialist as has R. B. HAMILTON, dealer development representative in the southwest zone. W. C. EWERT, formerly merchandising manager for Central Air Conditioning & Heating, Inc., Nashville, Tenn. has been appointed room air conditioner sales representative-southeast.

Fedders-Quigan Corp.—FRANK LUKSHA, associated with the New York service headquarters, has been promoted to southeast district service manager to assist distributors in North and South Carolina, Georgia, Alabama, Florida, and most of Tennessee.

"Freon" Products Div., E. I. du Pont de Nemours & Co., Inc.—WILLIAM F. KELLY, sales correspondent in the eastern district office, has been named office manager in New York City.

McIntire Co.—STANISLAW WITKOWSKI has been added to the engineering staff to work in research and development. R. E. MCINTYRE has been named to

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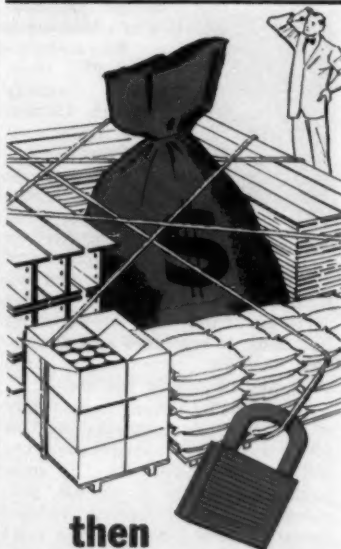
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Refrigeration Problems And Their Solution

(As Written by Paul Reed)

Building Up Pressure for Leak Testing (3)

In the preceding article we described a method of building up pressure in a system to be tested, by putting the rather high pressure of CO₂ in "on top of" the normal pressure of the refrigerant. We "built up" a Refrigerant-12 pressure in the low side of a locker plant from just a little above 0 p.s.i.g. to 100 or 150 p.s.i.g., so that we could find a leak that we were pretty sure was there.

DO CO₂ AND THE REFRIGERANT REACT CHEMICALLY WITH ONE ANOTHER?

Several questions arise, however. The first question should be: "But will CO₂ mix with the Refrigerant-12 without a chemical reaction? Do they unite to form some corrosive compound, or some compound that reacts on the oil or the refrigerant?"

That is a point to consider, for there seems to be too great a tendency these days to put all sorts of things into a refrigerating system to cure its ills. There are only two things that have any place in a compression refrigerating system: refrigerant and oil.

Fortunately, CO₂ does not react chemically with Refrigerant-12 or for that matter, with any of the commonly used refrigerants. They mix, but they do not affect one another. So we do not have to worry about the possibility of "gumming up" the system with corrosive compounds, sludges, or other materials that will be harmful and troublesome.

DO THE GASES MIX?

CO₂ is a heavier gas than Refrigerant-12 gas; so will the CO₂ settle to the bottom of the plates or coil, or whatever we are testing, leaving the Refrigerant-12 gas at the top? Then if we test with a halide torch, would a leak in the bottom part of the coil show up? It wouldn't if the Refrigerant-12 and the CO₂ stay separate, with the Refrigerant-12 staying at the top and the CO₂ at the bottom.

Refrigerant-12 gas and the CO₂ gas mix freely. The CO₂ does not go to the bottom and the Refrigerant-12 gas to the top just because CO₂ gas is heavier than Refrigerant-12 gas at the same temperature.

They both fill the cylinder just the same as if the other gas were not there at all. The cylinder is completely full of CO₂ gas, and it is completely full of Refrigerant-12 gas both at the same time.

Each gas is composed of tiny particles called molecules. The molecules of a gas are far apart from one another and they are moving about. The molecules of the CO₂ and of the Refrigerant-12 are all mixed together. Therefore, they each can and do, completely fill the cylinder at the same time and completely independently of each other. They do not settle out from one another.

An Irish physicist named Dalton

in the coil, top or bottom equally well.

WILL THE CO₂ THIN THE REFRIGERANT?

The CO₂ is "inert"; its purpose is merely to build up the pressure. If it leaks out it does not affect the halide torch; only the Refrigerant-12, methyl chloride, or other halogenated hydrocarbon gas is picked up by the halide torch.

So does the higher CO₂ pressure help any? Is the Refrigerant-12 coming out of the leak quite rarified or "thin"? Will it affect the torch any better than if it were at low pressure? The CO₂ forces it out of the leak, but is it so thinned out that it has little effect on the halide torch?

Since the Refrigerant-12 fills the coil completely, just the same as if the CO₂ were not mixed with it, the Refrigerant-12 is just as "rich" as if it were in the coil alone. Therefore, the mixture of Refrigerant-12 and CO₂ will cause the torch to change color just the same as if it were Refrigerant-12 only.

(To Be Continued)

You Asked About It

From the many requests for information it receives, the News will select and publish some of general interest. In many instances, the answers will be supplied by authorities in the industry. If you do have a question or problem concerning which you think the News might be able to help, be sure to state the problem clearly, and provide as much information as possible.

Q. In changing valve plates on older compressors, I find the familiar reed-type is being replaced by disc-type valves. When these newer plates are used, different gaskets are needed. Will the change in valves and the slight change in clearance change the efficiency of the compressor? Why the change in design?

D.G.T.—Akron, Ohio

A. G. E. Detrick, service manager of Copeland Refrigeration Corp., answers that manufacturers carefully consider changes of this type before they make them. In this specific case, a very slight reduction in capacity might result from using a heavier gasket between the valve plate and the compressor body.

At the same time, however, the over-all effect of the change would tend to increase efficiency, compressor life, and insure more trouble-free operation of the unit.

The reason for changing to disc-type valves is primarily that the change accomplishes greater efficiency. At the same time it reduces the susceptibility to breakage which was frequent, under certain conditions, when using the reed-type valve.

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Air Distribution Requirements In Year-Round Air Conditioning

By Frank D. Klein, Chief Engineer, Governair Corp.

Frank Klein has been associated with the air conditioning and refrigeration industry for over 20 years. An engineering graduate of the University of Michigan, he has held executive positions with a number of leading manufacturers.

Putting Psychrometry To Work (3)

In the following example the solution of a cooling problem is approached, not from the amount of air necessary to absorb a certain amount of sensible heat, but from the standpoint of determining the Dry Bulb Temperature of a required air supply, or given air supply in order to maintain a space at a certain effective temperature. (DB.)

Example:

A residence has an indicated Heat Gain (sensible) of 42,000 B.t.u. per hour. The warm air furnace equipment to be installed will handle 2,000 c.f.m. What will the Dry Bulb Temperature of the discharged air have to be in order to maintain the dwelling interior at 73° F. DB?

Solution:

$$R = \frac{H_s}{1.1Q} = \frac{42,000}{1.1 \times 2,000} = 18.9^\circ$$

73° - 18.9° = 54.1° DB temperature of air supply.

The foregoing examples should be illustrative of the methods of arithmetical psychrometric analysis in calculating heat and heat transfer as applied to both heating and cooling with air.

However, at this point we must recognize and interject the process of mixing air atmospheres. This is highly necessary and of course is found when ventilation enters the required

conditioned air atmosphere quality.

Here again the Psychrometric Chart and its short cut methods are available to us.

Today's contractors and conditioned air designers rely too much on infiltration to supply outside air for the purpose of maintaining air quality balance. This is a hangover from commercial experience where normal construction infiltration plus traffic in and out supplied in many cases sufficient outside air to get by. The home dwelling is not in this class of construction.

'HOMES BETTER CONSTRUCTED NOW'

Today's homes are being built better, construction is tighter, fewer outside openings are being provided, and in the normal home, traffic is held to a minimum either by habits of the occupants or by force in order to conserve toward economical operating costs.

It is a rare instance when a contractor engaged in installing such systems will offer either the builder or homeowner an argument for additional heat output or additional tonnage in the cooling cycle in order to provide a sensible and comfortable air change and mixture of outside fresh air. This can be a shortsighted attitude, for sooner or later it leads to customer dissatisfaction if not an uncalculated rise in sensible heat ratio to latent and frozen coils; this particularly where air supply equipment is borderline, in the cooling cycle.

TRADE
AIR

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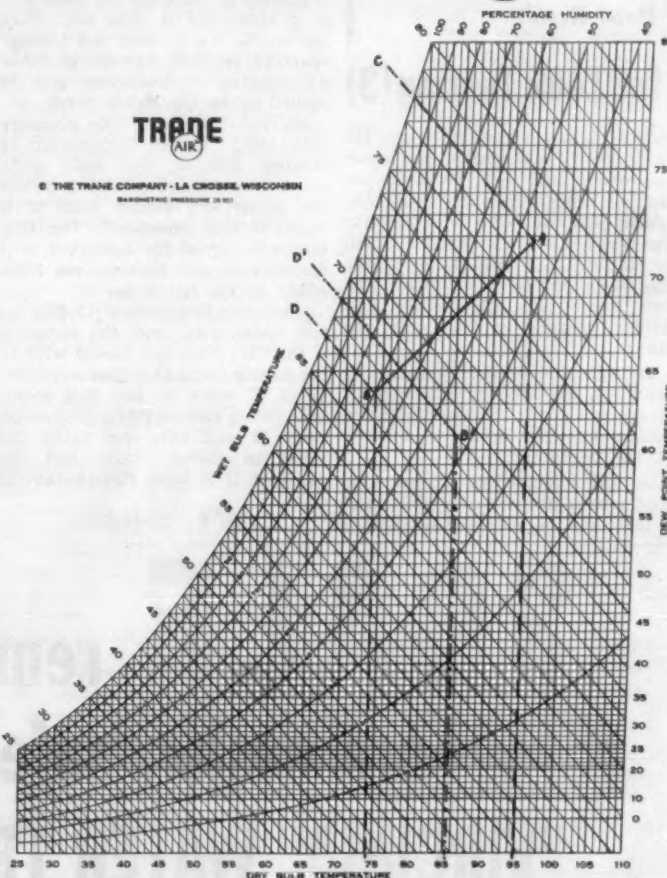


FIG. 9.—Psychrometric Chart shows some typical problems in air mixtures.

It has been shown in previous investigations that air Quality is just as important as air Quantity and Temperatures in conditioned air atmospheres. More about this will appear later in this series.

Let it be sufficient at this point to assume the necessity for the mixture of indoor return-outdoor air for proper quality balance and learn the methods by which we can determine the condition of the air atmosphere at that point where it comes into contact with the heat transfer surface to provide the discharge air as required.

In the cooling cycle, determining the quality or condition of the air prior to its entry through the evaporator coil for ultimate discharge is a familiar problem to us all. It remains just as much a problem to determine the condition of the air prior to its contact with the Heat Exchanger in a warm air, forced air furnace, or heating medium of any kind, meant for heat transfer.

Unless one lives in a vacuum air intermixture is always found as a function, either naturally or induced. The most common air-to-air mixtures occur of course due to a mixture of indoor and outdoor air. This might come as a planned thing, or it might come by infiltration. The fact remains that the condition must be determined to properly qualify equipment intended to create artificial atmospheres.

'TYPICAL PROBLEMS IN AIR MIXTURES'

By using the Psychrometric Chart we can refer to some typical problems in air mixtures. Refer to Fig. 9.

Assume a Cooling Cycle operation, and further assume that the outside air conditions are: 95° DB and 78° WB. The confined area in which the cooling cycle is doing its work is designed to temper the conditioned space to 74° DB and 67° WB.

The Psychrometric analysis of the potential problem facing the cycle equipment at this point has everything to do with the selection of the equipment. For instance, assume further another point in our example of outside infiltrated air; air finding its way into the confined space, or home, due to construction deficiencies and aggravated by the frequent opening and closing of outside doors, possibly by chil-

dren going in and out.

Therefore, note first, the line on Fig. 9 drawn from 95° DB-78° WB to 74° DB-67° WB. This line represents the Line of Conditioning Adjustment, that is, the change that is desired from what the atmosphere might be, if left subject entirely to the cited outside conditions, to the atmosphere desired by conditioning. This is the work the Cooling Cycle equipment must do, in bringing about this change.

'RECKON WITH AT MIXING PROPORTION'

Thus in any instance where the 95-78 air is allowed to mix with the 74-67 conditioned air it must be reckoned with in that proportion being mixed. The proportion of the 95-78 air being mixed must be determined or calculated for, in order to in turn determine the condition of the air introduced to the evaporator coil as Return Air. Once this is determined then the Cooling Cycle equipment can be sized to accommodate it.

Obviously equipment chosen to handle a return air of let us say 82° DB-73° WB which might be normal to a 99% return of conditioned air brought back from the space, will not handle a return air of 89° DB-75° WB resulting from a mixture of return air from the space and 95° DB-78° WB air being let in through a partly cracked open window, a door standing ajar, excessive leakage in construction, or from some other source.

Assume that in the course of events, in our example, 25% of the air being introduced to the cooling cycle (evaporator coil), was 95° DB-78° DB, the balance or 75% being returned was 74° DB-67° WB. First, of course, the original Line of Conditioning Adjustment as shown in the Fig. 9 running from "A" to "B" is interrupted; however note that it is interrupted proportionately to the mixture taking place, thus the actual Line of Conditioning Adjustment is from "A" to "B" and on to "D." This is a purely hypothetical example. By using the same Fig. 9, locate the following examples.

Example A:

This involves a home, whose construction is exceptional. Doors fit tightly, most all windows are of the immovable type, being set solidly in the aluminum sash, and not meant to be opened. Investigation indicates that there will be a minimum of infiltration, even by traffic.

TWO JOBS

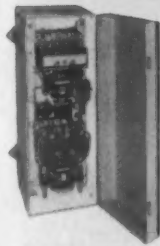
The Cooling Cycle and its blower will have to do two jobs, that is, (1) reduce temperature and humidity and (2) ventilate. The homeowners are quite social and do a great deal of entertaining, as a result at times there will be quite a few people in the home, smoking, etc.

A survey indicates that in order to offset the possibility of foul air under the extreme conditions, a supply of 35% Outside Fresh Air will be necessary through a fresh air duct leading to a mixing box, into which the return air ducts from the space enter.

Once again the outside temperature of the air is 95°-78° WB. Calculations call for the

(Continued on next page)

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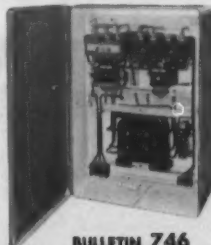
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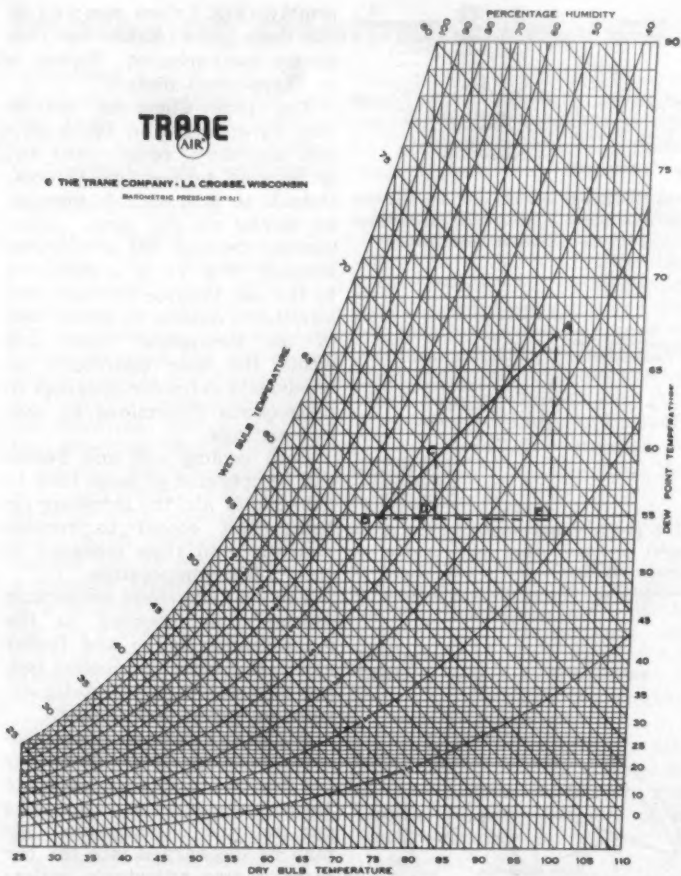


FIG. 10—Point A corresponds on the Psychrometric Chart to condition of outside air; Point B to return air. Straight line from A to B corresponds to the Line of Conditioning Adjustment

Air Distribution Requirements --

(Continued from preceding page) delivery to the interior of the home air having a temperature of 74° DB and 50% relative humidity. Sixty-five percent of the air will be returned from the interior of the dwelling, 35% will be added in fresh air from the outside.

What will be the final Dry Bulb and Wet Bulb temperature of the mixture?

Outside Air	35 x 95	33.3°
Return Air	65 x 74	48.0°
		81.3°

Final DB Temperature.

Refer to Fig. 9, lay a straight-edge on the 81.3° DB line (as close as you can estimate the .3). At that point where the DB line intersects the 50% Humidity line and read right to left that line of Wet Bulb Temperature that also intersects, and find the Wet Bulb Temperature will be approximately 68°.

HOW MUCH AID NEEDED FROM TWO SOURCES

Let us approach the problem from a different angle, one where there is available the two sources of air of given conditions and determination must be made of how much of each is necessary in order to produce the inside conditions desired.

Example B:

If the outside air is, let us say, 98° Dry Bulb and 75° Wet Bulb, and this is the air that is to mix with a Return Air Supply of 74° Dry Bulb having a 50% Humidity, what is the amount of outdoor air that can be used to maintain a Wet Bulb Temperature of 67°?

Refer to Fig. 10. It will be noted that Point "A" corresponds to the condition of the outside air; Point "B" to the Return Air. The straight line

drawn from A to B corresponds to the Line of Conditioning Adjustment. Locate, as has been done, the point where the 67° WB temperature intersects this Line of Conditioning Adjustment. The DB reading at "C" becomes 82°.

Thus the amount or percentage of Outside Air that can be mixed is:

BD
100 x BE
82 - 74
100 x 98 - 74

When confronted with air mixing problems such as that outlined in Example B, the percentage of outside air is a function of the line BC not AC.

'DON'T IGNORE VENTILATION'

Ventilation in either heating or cooling cycle for the residence is not something to be ignored. True, when fresh outdoor air is introduced into the return air stream in either cycle additional "load" is added on the heating or cooling equipment; in the majority of cases such added load dictates larger capacity equipment than is normal to merely the handling of return air from the ventilated space alone.

However, the tempering of a constant air supply of diminishing quality is not the function of Conditioning air. Too much stress cannot be put on the fact that the Conditioning of an air supply means just that in every sense of the word.

The volume of air enters into the picture here when we relate the mixture of one air condition to another, and the following are some typical problems which are solved psychrometrically on this point.

(To Be Continued.)

Refrigerant Distributors for Multi-Circuit Evaporators

Why They're Needed and How They Function Outlined

By Frank J. Versagi

TORONTO, Ont., Can. — "While a serviceman might go a lifetime without installing a refrigerant distributor, he could not be a serviceman long in this day of growing residential air conditioning without knowing something about such distributors. In fact, only by knowing about them can he properly diagnose some of the service problems he will encounter."

Speaking on "Refrigerant Distributors for Multi-Circuit Evaporators," Don Rentschler, product sales manager of Sporlan Valve Co., outlined the factors which led to the need for such distributors.

Excessive Pressure Drop Problem Developed

"With the development of multi-circuit evaporators," Rentschler said, "came the problems of excessive pressure drop and difficult refrigerant control. This is especially true of the newer refrigerants which require more pounds to be circulated per unit of refrigeration effect."

"While the use of external equalizer on the expansion valve will improve the performance of the valve, it does not alter the actual pressure drop in the evaporator, and the pressure drop causes high inlet temperatures and reduced evaporator capacity," he continued.

Explaining that when refrigerant passes through any expansion device, part of it immediately flashes into vapor, Rentschler pointed out that the two phases separate quickly.

"A typical condition just through the expansion device might be 80% liquid and 20% vapor, by weight. But this is 90% vapor and 10% liquid by volume. Not only do the phases

separate, but they tend to move at different velocities.

Simple Manifolds Not Practical

"Simple manifolds were not practical because they caused a difference in feed due to the unequal distances the liquid had to travel. This defect held for up-flow, down-flow, and side-flow manifolds."

Pointing out that the ideal distributor should remix the vapor and liquid just as they pass through the expansion device, then redistribute the homogeneous mixture equally throughout a multi-path system, Rentschler outlined the historical development of distributors.

At this time, he declared, best results seem to be offered by the pressure drop type of distributor. According to Rentschler, this design is useable in any mounted position and of being effective under relatively wide load conditions.

In actual use, he said, the pressure drop distributor—with properly selected orifices—increases the velocity, homogenizes the two phases, and feeds them equally into all circuits.

In making orifice selections, he cautioned, carefully follow the manufacturer's instructions.

A good rule of thumb is to pick an orifice which will be heavily loaded under normal conditions. Then, when underloaded or imbalanced, the orifice may still have 80% of its rated load and remain effective.

Be Sure Tubing Length Is Equal

"One very significant installation precaution," he said, "is to be sure the tubing length is equal for all circuits."

From the floor Rentschler was asked: since multi-circuit evaporators and distributors require even loading which is sometimes impractical, why not

design a system which does not need even loading to insure equal refrigerant distribution?

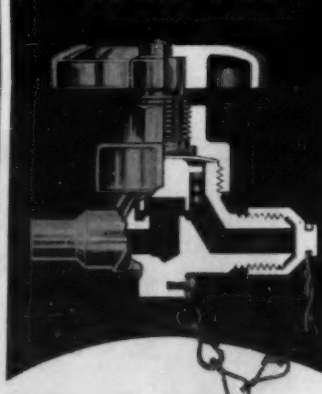
In answering this question, Rentschler mentioned that in practice, the symptoms for an unequal load are the same as those for uneven refrigerant distribution and this should be considered in diagnosing the difficulty.

"However, the total effect of all the factors affecting evaporators may take so many directions (for example, they can add up, or cancel each other out) that it would be impossible to predict and plan for them except on a custom basis, job by job.

"Even if this were possible, it would be economically impractical," Rentschler concluded.

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Detroit Builders Show Visitors Get Cooling Book

DETROIT—A pamphlet telling what winter air conditioning is and what it can do for the homeowner was distributed at the local builders show in March by the Detroit Warm Air Heating Association.

The pamphlet urged "Be sure your winter air conditioning or warm air heating work is done by a qualified heating contractor."

A member of the association is such a contractor, it hinted.

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Servicing Automobile Air Conditioners

(Vol. 2)

BY C. DALE MERICLE

The Chevrolet auto air conditioner is the fifteenth make to be discussed in this series. Makes previously described were A.R.A., Artic-Kar, Frigette, Frigikar, Kauffman, Mark IV, Airtemp, Mobilette, Novi, Vornado, Polar-Temp, American Motors, Buick, and Cadillac.

CHEVROLET (1)

Chevrolet Motor Div.
General Motors Corp.
Detroit 2, Mich.

Front-end type air conditioner offered as an optional accessory by Chevrolet in 1956 and 1957 is essentially the same system employed in 1955.

Evaporator assembly is mounted in the fire wall, condenser is located in front of the car radiator, and compressor is belt-driven off the engine through a magnetic clutch.

Control of car temperature (and prevention of icing) is obtained by an adjustable thermostat which cycles the magnetic clutch and therefore the compressor in response to the thermostat setting.

Refrigerant-12 is used in the 1956-57 Chevrolet systems. Charge is 2½ lbs. in 1956 models, 4 lbs. in 1957 units.

Compressor

Compressor on the 1956-57 Chevrolet conditioners is the Frigidaire 5-cylinder axial unit. It is mounted on the right side of the engine and is driven through a magnetic clutch.

Service valves are located on the back of the compressor opposite the flywheel end. The discharge service valve is above the suction service valve.

An oil test fitting is provided on the under side of the compressor near the flywheel end. Oil level can be checked by first running the system for a few minutes. With the engine turned off, the screw of the oil test fitting should be "cracked" slightly two times. If oil flows from the fitting, the compressor has at least its required minimum charge of 4 oz.

Oil used in this compressor is Frigidaire 525 viscosity compressor oil.

Condenser

Condenser is located in front of the car radiator. Inlet to the condenser of 1956-57 models is at the top right (curb) side. Outlet is at lower right.

A combination receiver-drier is mounted on the right side of the condenser. Sight glass is located in the liquid line at the outlet of the receiver.

On 1957 models a quick disconnect connection is provided in the liquid line just above the sight glass fitting.

Evaporator

Evaporator assembly of the 1956 Chevrolet conditioner is mounted on the engine compartment side of the dash panel. It houses the evaporator coil, thermostatic expansion valve, and car heater core. The 1957 evaporator assembly differs somewhat from the 1956 model and will be described separately.

(Because the heater coil is part of the evaporator housing, it may be well to keep permanent-type anti-freeze in the engine cooling system at all times.)

Superheat setting of the thermostatic expansion valve on 1956 models can be adjusted in the field. A removable panel on the evaporator housing gives access to the expansion valve for adjustment or replacement.

Blower of the 1956 system and the conditioner air duct as-

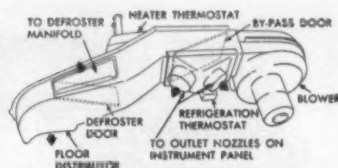


FIG. 1—Blower and air duct are mounted on dash panel in passenger compartment on 1956 Chevrolet conditioners.

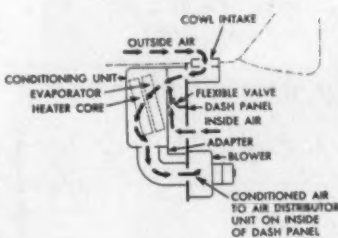


FIG. 2—Schematic view of 1956 Chevrolet air flow shows how outside air enters through cowl intake ahead of windshield. System can also operate on recirculated air.

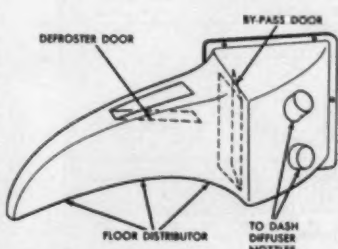


FIG. 3 is schematic of air distributor in 1957 Chevrolet units.

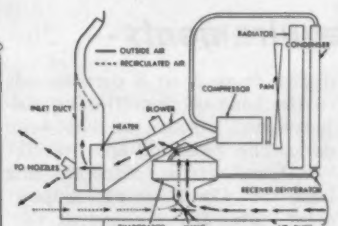


FIG. 4 is schematic drawing of air flow arrangement in 1957 Chevrolet conditioners. This system can operate on 100% outside air or 100% inside air but can't mix the two.

sembly (Fig. 1) are mounted on the dash panel inside the passenger compartment. Blower is of three-speed design.

The 1956 Chevrolet system may be operated on 100% outside air, 100% recirculated air, or varying proportions thereof. Outside air is brought in through an intake on the cowl. After passing through the evaporator housing (Fig. 2), it is delivered to the car interior through two adjustable outlets on either side of the instrument panel and either the floor distributor or windshield defroster openings in proportions determined by control settings.

Both cooling coil and heater can be operated at same time to dehumidify air, the incoming air being first cooled to remove moisture and then reheated to the desired temperature.

The 1957 Chevrolet evaporator assembly is mounted to the right fender flange and fender skirt. It houses the cooling coil, non-adjustable thermostatic expansion valve, and blower.

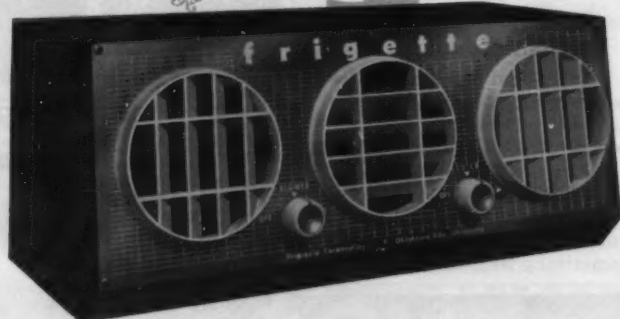
Air pulled through the evaporator housing is discharged by the blower through a separate heater core and thence into the car interior. Conditioned air may be discharged into the car through two adjustable outlets on either side of the instrument panel, or a floor distributor (Fig. 3), or with varying proportions going to the instrument panel outlets and floor distributor.

Design of the 1957 system permits it to operate on 100% outside air obtained through the right fender air duct or on 100% recirculated air (Fig. 4). If this particular control is set in the intermediate position, however, outside air enters the car interior without passing through evaporator or heater.

Cooling coil and heater can be operated at same time, as in 1956 model, to dehumidify air.

(To Be Continued)

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Improving Heating Sales --

(Concluded from Page 1, Col. 3)
by continued emphasis on comfort cooling. One panel discussion was devoted to the subject of residential air conditioning.

Possible Restrictive Effects Noted

During the association's annual meeting, Lewis A. Andrus of Kalamazoo, chairman of the group's code and licensing committee, warned the contractors of the possible restrictive effects on them of a new state electrical licensing law which went into effect the first of this year.

He said this law requires that any individual servicing or working with electrical equipment of 50 volts or more and costing \$25 or more has to be a licensed electrical contractor or a licensed journeyman working for a licensed contractor.

Later, Andrus told AIR CONDITIONING & REFRIGERATION NEWS that under this law, the contractor's state licensing fee is \$10 if he does not have any employees and \$50 if he employs one or more men.

He said the Kalamazoo Heating & Sheet Metal Association has asked the state attorney-general for an opinion as to whether or not the city of Kalamazoo or any city in the state could issue limited licenses to heating contractors to do electrical wiring for a heating system.

Kalamazoo heating contractors are now operating under a limited local license setup and the city is permitting this until a legal opinion is received from the attorney-general's office, according to Andrus. He said that an opinion has not yet been issued.

Andrus said that if no opinion can be obtained or if one is issued which the Kalamazoo association considers detrimental to the trade, then the association will institute a test case to challenge the law's constitutionality.

Addressing contractors at the state association meeting, Andrus declared that they are going to have to fight this law and "get our own code put in."

Home Air Conditioning Chief Topic of Session

Major share of the opening session was devoted to the discussion on home air conditioning.

In listing a number of ways to increase sales, Carl E. Beltz, sales manager, Air Conditioning Div., Star Steel Supply & Burton Co., urged his audience to take a lesson from the automobile and appliance people with whom they are competing for the consumer dollar.

The appliance and automobile salesman, he said, "has a showroom and displays his products effectively. He knows his product, its good points, its benefits; and is identified with his business."

Another panel discussion was devoted to the topic, "Quality Systems, the Future of the Industry," with panel members covering new installations, replacement, "A Builder's View," and "The Wholesaler's View."

One of the participants, H. W. Meggs of Rose City Sheet Metal Works, New Castle, Ind., emphasized the sales oppor-

tunities of the replacement market. (Other convention speakers also urged the contractors not to neglect the modernization and replacement field as a source of profitable business.)

Meggs told his audience that "we must learn to apply ourselves in doing a good selling job." He said that many people know nothing but price and are not aware of the advantages of quality systems. Contractors must educate consumers on these benefits, "pound this into them—in a nice way, of course."

This theme was stressed in other convention talks, too.

Successful Group Ad Program Described

In one of these, Robert S. Schmieder, executive secretary of the Milwaukee Sheet Metal Contractors Association, described—in a paper read in his absence—a successful group advertising program undertaken in 1956 and 1957.

In each of these years, Schmieder explained, a series of 13 full-page messages were run in the "Home Section" of a local newspaper, pointing up the things for the public to consider when specifying good warm air heating and air conditioning systems.

Regarding development of the program, he said, in part: "We reasoned that the public was accepting the mediocre and poor jobs only because they were not informed that better installations were available and that the better installations would produce more real comfort."

Referring to ads run during the 1957 campaign, Schmieder noted that half of each page was devoted to "telling the story" and the other half to listing participating firms.

Message Got Through to Public

Results, he said, "were beyond our expectations. We are satisfied that our messages not only got through to the public, but we can report many orders resulting as a consequence," even though the purpose of the program was educational rather than to ask for orders.

"Our ultimate objective," Schmieder pointed out, "is to be able—as individual contractors dedicated to this program—to tell the public that we are ready to certify to the owner that he will get installations based on certain measurements of comfort—and backed up by our association's guarantee."

Concluding, Schmieder emphasized that to do an effective promotional job both collectively and individually, "you must have a strong local association, tied in with a strong national association that can and will give you helps and services."

In another program feature, Randall A. Nelson, director of public relations for the National Warm Air Heating & Air Conditioning Association, presented details of the "Operations Dollars" campaign developed by NWAHACA's staff to promote the sale of quality systems.

Other speakers discussed marketing, direct mail advertising, accomplishments under heating codes, costs of doing business, installation, and service.

During the state group's meeting, members approved a new set of by-laws under which, according to President Charles S. Flynn, "we are to work hand-in-glove with local associations."

Among other things, the new by-laws provide that in addition to four officers, the board of directors at large, four of which shall be elected at each annual meeting for two-year terms, and each affiliated local or area association shall be entitled to elect one director for each 40 affiliated members or fraction thereof, who shall serve for a term of one year. Also, the retiring president shall be a board member for one year.

Purposes of the association are listed in the by-laws. Some of them are to establish a central information bureau for the heating and sheet metal industry of Michigan, to promote and protect the welfare of the industry of the state, and to establish programs on industry and public education.

It was reported at the meeting that membership in the state group had increased by about 75% in the last year. A hospitalization-sickness-accident insurance plan was outlined.

In a break with tradition, Flynn was re-elected president of the association. This was the first time that a president of the group had been chosen to succeed himself. Flynn is president of Consolidated Heating Co., Muskegon.

William Calverley of William B. Calverley & Sons, Inc., Hazel Park, was elected vice president and Earle Oole of Earle Oole Heating & Cooling, Grand Rapids, was named treasurer. N. J. Biddle of Detroit is secretary.

Elected to the board for two-year terms were Fred Breitmeyer of Mt. Clemens, Charles Shartow of Midland, Lewis Andrus of Kalamazoo, and Henry Labadie of Royal Oak.

Detroit Controls --

(Concluded from Page 1, Col. 5) and industrial uses.

Haist has been vice president of the division since 1954. Prior to that he had been general manager of Belknap Mfg. Corp., which was taken over by Detroit Controls.

In the other executive shifts, E. J. Doucet, formerly vice president in charge of sales, becomes vice president in charge of marketing, and F. G. Coggin becomes general manager of all sales. F. J. Kreissl, formerly manager of the appliance controls department, becomes assistant general sales manager.

F. Y. Carter, formerly manager of the refrigeration controls department, has been made manager of the newly-formed air conditioning controls department, in which is combined the former refrigeration and heating controls department.

H. L. Walker, formerly manager of the heating controls department, has been made manager of the appliance controls department.

W. H. Hohmeyer, who had been manager of sales research and promotion, becomes manager of the market planning department. Appointed as controller for the Detroit Controls Div. is Ernest Stevens.

Sutton Dealer Stock Plans --

(Concluded from Page 1, Col. 3)
pay any finance charges during the pre-season period. He has merchandise for sale and pays for it as he sells it to the consumer or on July 31, if he has any unsold at that time. The plan covers all Vornado products."

Following is the exact quotation of Sutton on marketing in the annual report:

"We have introduced a new concept in the distribution of air conditioning products which enables us to receive full payment for our products as we make delivery, and which gives us constant control of our merchandise up to the time of consumer purchase."

"Previously we followed industry practice of selling on extended terms with due dates maturing in mid-year even though the merchandise was delivered well in advance of the maturity date."

"This created large accounts receivables which could be seriously affected by a poor sales season such as 1957. Under our new Secured Distribution Program, accounts receivable will be greatly reduced with a resulting stabilization of profits."

For 1957, the company reported a net loss of \$1,719,579 on sales of \$37,945,752, compared with a net profit of \$1,164,039 on sales of \$38,339,456 in 1956. The deficit last year was attributed mainly to the coolest air conditioning season in years.

In the annual report, Sutton said the cool weather resulted

in an "alarming" inventory buildup, causing drastic unit price revisions. Rather than warehousing large quantities of unsold units, the company chose to reduce prices still further and to take the resulting loss in 1957 instead of postponing it to 1958 "where the loss could have been even greater."

Sutton said this step "enabled us to move substantially all of our 1957 units, and we will enter 1958 with relatively clean distribution channels."

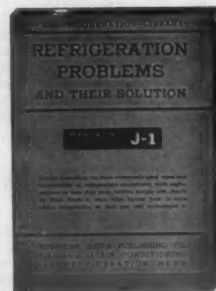
In spite of the 1957 loss, the company has made "substantial progress," according to H. F. Hildreth, president. He added: "We have a stronger organization, reduced operating expenses, and improved products, plus a new profit awareness."

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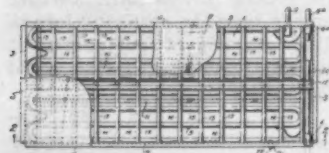
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PATENTS

Week of Nov. 26

2,814,186. TRUCK PLATES. Herman W. Kleist, Hollywood, Ill., assignor to Dole Refrigerating Co., Chicago, Ill.



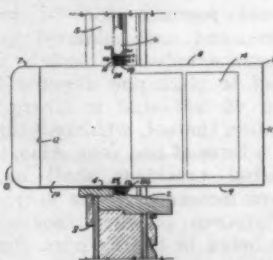
9. In a truck plate for refrigerating cars, trucks and the like, a plate body which includes parallel spaced plate side walls and peripheral side and end walls connected in gas-tight relationship, spacing means within the body

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D. C.

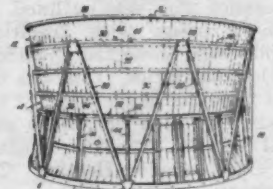
thus formed, a coil within said body between said spacing means and one of said plate side walls, said coil being in direct heat exchange contact with said plate side wall, a plurality of generally parallel transverse ducts adjacent one end of the plate and extending from one peripheral side wall to the other, one end of said coil being connected to one said duct, the other end of the coil being connected to the other said duct.

2,814,244. WINDOW MOUNTED ROOM AIR CONDITIONER. Paul E. Hord, Tebbets, Mo.



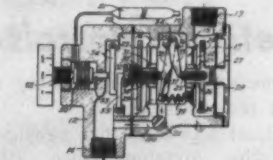
1. A room air conditioner for mounting in a window opening comprising, a shell containing air cooling and circulation equipment, open-ended trackway housings fixed on the shell and extending transversely thereof, extension frames each having a vertical member arranged at the sides of the shell with legs slidable in the trackway housing for movement of the extension frames toward and away from the shell, said legs having inwardly facing channels therein.

2,814,435. PAN CYLINDER. Homer E. Fordyce, Gashland, Mo., assignor to The Marley Co., Kansas City, Mo.



1. In combination, a tubular body including a plurality of elongated, initially flat, flexible staves; a pair of spaced retainers operably connected with the body for holding the staves against inward radial movement adjacent each retainer; and a hoop surrounding the body in engagement with the staves between the retainers, the diameter of the hoop being less than the diameter of the body at said retainers whereby the hoop holds the staves tensioned inwardly and longitudinally arched between the retainers.

2,814,447. VALVE STRUCTURE. George P. Greenamyre, Monrovia, Calif., assignor to General Controls Co., Glendale, Calif.

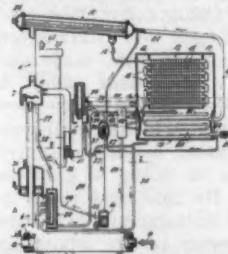


1. In a valve structure: means defining a chamber having an inlet and an outlet; an inlet valve and an outlet valve controlling communication between said inlet and said chamber and between said chamber and said outlet, respectively, and comprising respectively, an inlet closure movable into and out of engagement with an inlet valve-seat and an outlet closure movable into and out of engagement with an outlet valve seat; said chamber having a restricted passage connecting said outlet to said chamber.

2,814,468. AIR CONDITIONING. Norton E. Berry, St. Louis, Mo., assignor, by mesne assignments, to Arkia Air Conditioning Corp., a corporation of Delaware.

1. In a heating and cooling system, an absorption refrigerating apparatus of the two pressure type charged with a refrigerant-absorbent solution and including a generator, a condenser, an evaporator which functions as a cooler on cooling cycles and as a heater on

heating cycles, an absorber and conduits interconnecting said elements to provide circuits for flow of refrigerant medium and absorption solution and for regulating flow of such fluids there-



through, a by-pass connected between the high and low pressure sides of the apparatus for flow of refrigerant vapor to the evaporator during heating cycles.

2,814,469. PLATE FOR PLATE HEAT EXCHANGERS. Pontus Larsson Hyyte, Ljungshusen, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden, a corporation of Sweden.



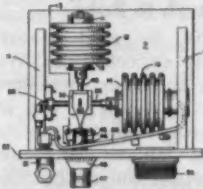
1. In a heat exchange plate, the combination of an elastic sealing rib extending along the edge portion of the plate, and a supporting and stiffening device for the sealing rib fixed to the plate outside said rib, said device forming rib-supporting surfaces at opposite sides of the main plate of the plate and extending at an angle to said plane, one of said surfaces engaging said rib and the other surface being engageable with the adjacent sealing rib of a similar adjacent plate, whereby said device is adapted to support said first plate by the ribs.

2,814,470. HEAT EXCHANGER. David G. Peterson, Wellsville, N. Y., assignor to The Air Preheater Corp., New York, N. Y.



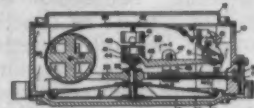
1. A heat exchanger core comprising metallic plate members mounted in spaced relation to form a fluid passage; a plurality of sinusoidal fin elements in said passage each comprising a metallic wire bent to sinusoidal form to provide a plurality of substantially U-shaped loops disposed in alignment along the axis of said wire with the leg portions extending back and forth between the walls of said passage, the yoke portions of adjacent fin members being in alignment transversely of said passage.

2,814,588. CONDITION RESPONSIVE CONTROL DEVICE. Robert J. Kutzler, St. Louis Park, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.



7. In a control device, two condition responsive elements, members attached to each of said condition responsive elements arranged so that their lines of motion are at an angle to each other, signal producing means carried by said members comprising electrical contact means adapted to cooperate when the said condition responsive elements are in predetermined relationship.

2,814,699. DIFFERENTIAL PRESSURE SWITCH. Morlin J. Roche, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.

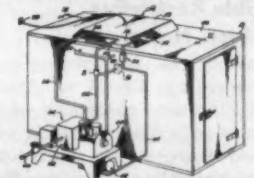


1. Spring rate compensation apparatus comprising: a support member; a lever pivotally connected to said support member; condition sensing means including a force output member having a positive spring rate with increases in the magnitude of the condition sensed, the force output member of said sensing means operatively associated with a first portion of said lever removed from the pivot point thereof for applying a force thereto; and spring means associated with a second portion of said lever removed from the pivot point thereof and having an effective negative spring rate with increases in the magnitude of the condition sensed by said sensing means, said spring means being arranged to apply a force to the second portion of said lever with the resulting moment opposing the moment due to the force applied by said sensing means, a decrease in moment resulting from the force due to said spring

means accompanying an increase in moment resulting from an increase in force due to said sensing means.

Week of Dec. 3

2,814,933. AIR CONDITIONED REFRIGERATOR. Emerson F. Burgess, Orange, Calif., assignor to Zero Cold, Inc., Santa Ana, Calif.



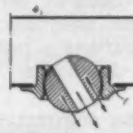
1. In an air conditioner of a type particularly adapted to conditioning air for use in a refrigerated zone, means for controlling the temperature and humidity of air entering the zone, comprising: a ducted fan recessed in a ceiling of said refrigerated zone; an air passage in communication with said fan and with said refrigerated zone.

2,814,934. COMBINED COOLING COIL AND DEFOSTING ASSEMBLY FOR REFRIGERATORS. Herbert C. Rhodes, Portland Ore.



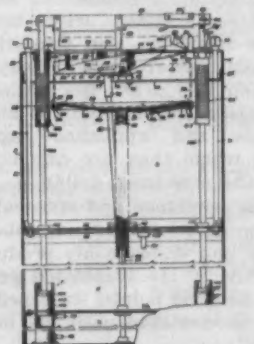
1. In a cooling coil and defrosting assembly of the character described, a closed housing having a pair of parallel inside walls, a cooling coil located in said housing, the spacing between said walls corresponding to the external diameter of the tube from which said coil is formed, external walls extending over the outer faces of said inside walls respectively secured to and contiguous with said inside walls, a heating element within each of said outside walls, means for mounting said housing within a refrigerator and means for receiving the products of defrosting when said housing is defrosted.

2,814,978. VARIABLE-FLOW AIR DISTRIBUTORS FOR AIR-CONDITIONING AND VENTILATING SYSTEMS. Jean Salles, Paris, France, assignor to Societe Anonyme des Etablissements Nou, Lille, France, a corporation of France, and Jean Leon Fourtier, Paris, France.



1. An air distributor for air-conditioning and ventilation purposes which comprises, in combination, an annular member adapted to be secured to an air supply pipe and formed with an axial aperture having the shape of a symmetrical spherical segment, and a valve member mounted for swivelling movement in said axial aperture, said valve member being of generally spherical form with the diameter thereof corresponding substantially to that of said central aperture.

2,814,998. DISPENSING MACHINE. Duane C. Maddux, Burbank, Calif.



13. Apparatus for dispensing frozen confections and like materials, comprising: a housing including a tubular body section, open at one end, and a removable cover section normally closing said open end; a scoop carried by said cover section; means for supporting a carton containing a body of the frozen material within said housing, for advancing it against said scoop, and for rotating it so as to cause frozen material in the form of a ribbon to be shaved from said body by said scoop.

(Continued on next page)

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications \$10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

MARYLAND, WASHINGTON, D. C., and surrounding territory. Manufacturer's field sales representative. Age 35. Mechanical engineering degree. 13 successful years in establishing, managing, and promoting volume distribution in the heating, air conditioning and appliance fields. Seeks a line that offers a challenging opportunity. Reply BOX A5981, Air Conditioning & Refrigeration News.

FIELD SERVICE Representative—Age 42, home in Florida. Extensive experience in field of refrigeration and air conditioning service as well as washers and dryers. Have traveled as service representative. Will travel Southeastern United States to include Florida. BOX A5989, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

SALES APPLICATION Engineers—The Drayer-Hanson Division of National-U.S. Radiator Corporation needs two sales application engineers to work in the air conditioning section. Background in air conditioning essential. Some experience in product application, order procedures, and field sales practices desirable. Please send resume and salary requirements to Personnel Manager, DRAYER-HANSON DIVISION, P. O. Box 2215, Los Angeles 54, California. All replies will be treated confidentially.

WANTED: EXPERIENCED commercial refrigeration and air conditioning serviceman. Year round job with old established firm handling York and Hussmann equipment. Pay scale \$3.77 per hour. Call or write JOHANSEN & ANDERSON REFRIGERATION, 926 Plainfield Road, Joliet, Illinois. Phone 39383.

SALES ENGINEER: Top notch man to head department dealing in larger commercial and industrial air conditioning in the Southern California market. Prefer aggressive man 35-50 with solid background in similar position. Please write in full. BOX A5983, Air Conditioning & Refrigeration News.

RESIDENTIAL HEAT pump engineer—Leading manufacturer of air conditioning and refrigeration equipment has openings in newly established engineering section for heat pump project engineers with experience in residential split systems and packaged air conditioners product design. All replies held in strict confidence. Send short resume to BOX A5985, Air Conditioning & Refrigeration News.

CHICAGO WHOLESALE of refrigeration, air conditioning and heating lines needs either counterperson to be trained for outside sales or man with outside selling experience. Immediate full-time opening with live, progressive organization. Prefer man under 35 who can handle established accounts. BOX A5988, Air Conditioning & Refrigeration News.

PUBLICITY WRITER—middle thirties, for air conditioning and refrigeration account. Some technical writing experience and few years newspaper. Give qualifications and salary expected. Confidential. BOX A5990, Air Conditioning & Refrigeration News.

MANUFACTURER'S REPRESENTATIVE for central type air conditioner and electric heating. Territories open North and South Carolina, southern

Georgia, north Florida. Give experience and other details. BOX A5991, Air Conditioning & Refrigeration News.

AIR CONDITIONER Engineer and Production Manager—Midwestern firm planning small factory for production of window type air conditioners seeks services of experienced air conditioner engineer to design and engineer line and set up and operate factory. Excellent opportunity for right man interested in starting new venture with participation in profits but with no financial investment. Satisfactory salary guaranteed, plus percentage of profits. Send complete details about yourself including experience, etc. All replies will be held strictly confidential. BOX A5992, Air Conditioning & Refrigeration News.

POSITION OPEN for experienced refrigeration and fixture salesman. Company in business 28 years with distribution of market fixtures by largest fixture manufacturer in the U.S. Complete line of commercial and industrial refrigerating equipment. No household equipment. Good salary. Steady employment and fine climate. Must be experienced. Write particulars. P. O. BOX 10, San Bernardino, California.

EQUIPMENT WANTED

WANTED—SURPLUS valves, motors, relays, fittings, capacitors, controls, switches, etc. Job lots suitable for wholesale. ALFRED SUPPLY, 7140 N. W. 1st Avenue, Miami, Florida.

WANTED: USED ice machines—preferably Scotsman Flakers and Cubers. In reply, state model, year, serial, condition and asking price. Can use one or fifty. WATERS EQUIPMENT COMPANY, INC., Phone: RE 7-5377, P. O. Box 10013, Tampa, Florida.

EQUIPMENT FOR SALE

REPLACE YOUR tool box with a Handi-Roll! Sturdy, water-resistant duck. Ample tool capacity. Not a catch-all. Minimum carrying-weight, with locking strap and handle. Price \$3.95. Send for free folder. See your jobber, or send check to HANDI-ROLL COMPANY, 12381 Wisconsin Avenue, Detroit 4, Michigan. Postpaid. Manufacturers' agents wanted.

8 TWO ton air conditioners, complete with vertical evaporators and remote air cooled condensing units with Copeland compressors. 230 volt single phase. Original dealer cost \$620.00. All in original factory cartons. Selling \$400.00 each F.O.B. HUGHES PRODUCTS CO., 2 Lake Drive East, Packanack Lake, Wayne, New Jersey.

LATEST STYLE 57 production 1 h.p. 230 V. single phase 50/60 cy. Freon-12 hermetic compressors Model AS116 air conditioning HBP. Complete with Kilzon overload, relay, starting and running capacitor. \$69.00 ea. Send for free circulars and bulletins on air conditioning and refrigeration values. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

BUSINESS OPPORTUNITIES

COMMERCIAL REFRIGERATION & air conditioning. Restaurant supply and equipment business in midwest for sale. Owner has other interests. Business established 37 years—good reputation. Will sell inventory, office and shop equipment and trucks. Approximately \$35,000.00 required to buy. Reply BOX A5993, Air Conditioning & Refrigeration News.

MISCELLANEOUS

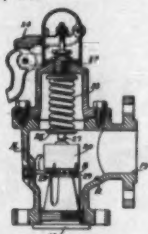
ESTABLISHED SERVICE company wishes to make connections with distributors or companies to handle warranty service and installations of all type of refrigeration units, window air conditioners and freezers in New York City. ATMO-TEMP-CONTROL COMPANY, 10-40 Jackson Ave., Long Island City, Ravenswood 9-2401.

NO FLOOR DRAIN?

INSTALLING
AIR CONDITIONER
ICE CUBE BIN
DRINKING
FOUNTAINS
BUY THE BEST
KESCO
AUTOMATIC
CONDENSATE
WATER DISPOSAL
PUMPS
1/30 H.P. to 1/3 H.P.
10 ft. to 50 ft. Head
At Your Wholesaler

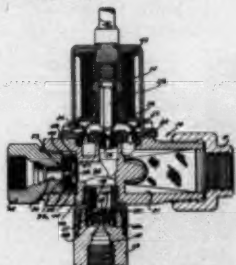


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 2,815,040. **PRESSURE RELIEF VALVE.** Ronald V. Smith, Pennsauken, N. J., assignor to J. E. Lonergan Co., Philadelphia, Pa.



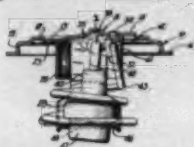
1. In a pressure relief valve having a casing, an intake nozzle in the casing defining a valve seat at its inner end, a valve element movable axially of said nozzle between closed and open limit positions into and out of sealing engagement with said valve seat, respectively, means to bias the valve element into engagement with the seat, a finger element slidably mounted adjacent the inner end of the nozzle for movement in a direction axially thereof between inner and outer limit positions. . . .

2,815,041. **SINGLE SOLENOID HYDRAULIC CONTROL VALVE.** Victor E. Rimsha and Robert B. Dahl, Chicago, Ill., assignors to The Dole Valve Co., Chicago, Ill.



1. In a flow control apparatus, means defining a chamber, inlet means for delivering fluid to said chamber, outlet means communicating with said chamber, discharge means communicating with said chamber, outlet flow control means between said chamber and said outlet means for maintaining a relatively uniform rate of flow from said inlet means to said chamber and through said outlet flow control means to said outlet means. . . .

2,815,173. **THERMOSTATIC BUTTERFLY VALVE.** Harold B. Drapeau, Oak Park, and Edward G. Bohac, Berwyn, Ill., assignors to The Dole Valve Co., Chicago, Ill.



3. In a thermostatic valve, a valve casing having a butterfly valve rockingly mounted thereon, said valve casing having a flat annular portion defining a port opening to be controlled by said valve and having a seating member spaced from said port opening, a temperature responsive element having a casing rockable on said seating member and having a piston extensible with respect to said casing in response to temperature variations, a pivotal driving connection between said piston and said butterfly valve element. . . .

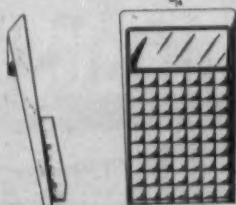
2,815,335. **MAGNETIC CATCH.** Macy O. Teator, New Orleans, La.



1. In a magnetic catch for holding a closure member in fixed position adjacent a frame member, the combination of an elongated armature support adapted to be rigidly mounted on one of said members, an armature element carried on said support for movement longitudinally therealong. . . .

DESIGNS

181,607. **REFRIGERATOR HANDLE OR SIMILAR ARTICLE.** Jean O. Reinecke, Chicago, Ill., assignor to Amana Refrigeration, Inc., Amana, Iowa.



Adds New Typhoon Heat Pumps--

(Concluded from Page 1)

sales, technical, and service assistance through its own staff, Typhoon hopes to broaden the market.

'MORE POPULAR'

John Gilbreath, Typhoon Air Conditioning Co.'s vice president in charge of sales, said that heat pumps have been gaining in popularity because they provide cooling and heating in an installation that costs only a little more than air conditioning alone and considerably less than many types of central systems using conventional cooling and heating equipment.

He added that they have been most popular in the southern United States because of predominantly low power rates in the south and because a heat pump heats most efficiently in mild winter weather.

Now, however, the heat pump market is changing, according to Gilbreath. He said new developments are making the heat pump practical and economical in many areas outside the deep south.

'OFFERING BETTER WINTER RATES'

"With more than more power companies offering attractive winter heating rates in order to balance winter consumption with their summer air conditioning loads and with introduction of easily-installed supplementary electrical resistance heaters, the heat pump provides the most efficient and economical air conditioning and heating system available in an increasing number of areas," Gilbreath asserted.

Gilbreath also pointed out that many new buildings design-

ed for air conditioning require little heat in winter, which is another development favoring growth of the heat pump market.

"Even in rather severe weather, a heat pump installation can often provide all the heat required in a store with heavy loads," he said.

Typhoon expects popularity of this type equipment to increase more rapidly than it has in the past. "And dealers who can offer a heat pump will have a competitive advantage in figuring installations," Gilbreath declared.

"Introduction of heat pumps in the Typhoon line is part of our policy to provide dealers with products that most economically meet the requirements of the widest range of applications.

"Just as we have successively increased the size of air-cooled air conditioners from 5 to 8, 10 to 15 and then to 20 tons to

compete in areas with water problems, we are now introducing a heat pump with the widest possible range of applications to help dealers get both feet in air conditioning's newest market," he said.

'APPLICABLE IN EACH COOLING FIELD'

The models that Typhoon will introduce are appropriate for the commercial and industrial installations which many Typhoon dealers specialize in but they also have wide application in the residential field, the announcement said, adding:

"They are compact and easy to install in single or multiple installations with or without ducts. Because they are self-contained units they may be installed anywhere that an air-cooled self-contained air conditioner is used. They are the same size as Typhoon air-cooled summer air conditioners of the same capacity."



Where Do Great Ideas Come From?

From its beginnings this nation has been guided by great ideas.

The men who hammered out the Constitution and the Bill of Rights were thinkers—men of vision—the best educated men of their day. And every major advance in our civilization since that time has come from minds *equipped by education* to create great ideas and put them into action.

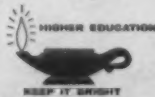
So, at the very core of our progress is the college classroom. It is there that the imagination of young men and women gains the intellectual discipline that turns it to useful thinking. It is there that the great ideas of the future will be born.

That is why the present tasks of our colleges and universities are of vital concern to *every*

American. These institutions are doing their utmost to raise their teaching standards, to meet the steadily rising pressure for enrollment, and provide the healthy educational climate in which great ideas may flourish.

They need the help of all who love freedom, all who hope for continued progress in science, in statesmanship, in the better things of life. And they need it *now!*

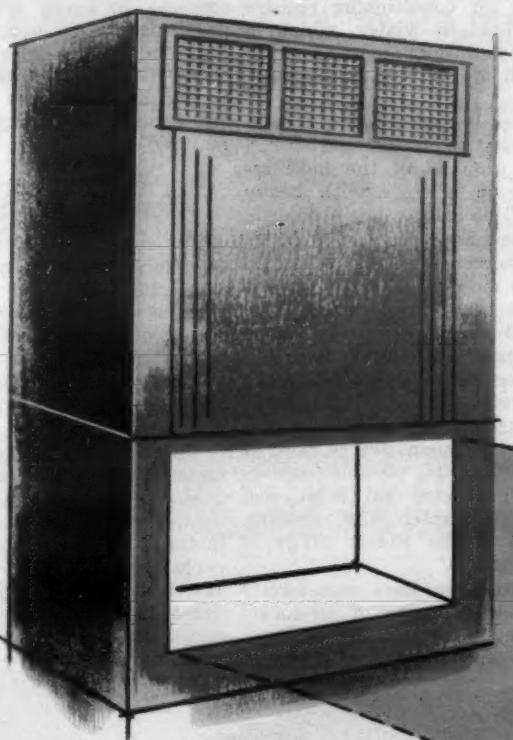
If you want to know what the college crisis means to you, write for a free booklet to: HIGHER EDUCATION, Box 36, Times Square Station, New York 36, N. Y.



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BRUNNER-METIC

$\frac{1}{4}$ -7 $\frac{1}{2}$ H.P. UNITS

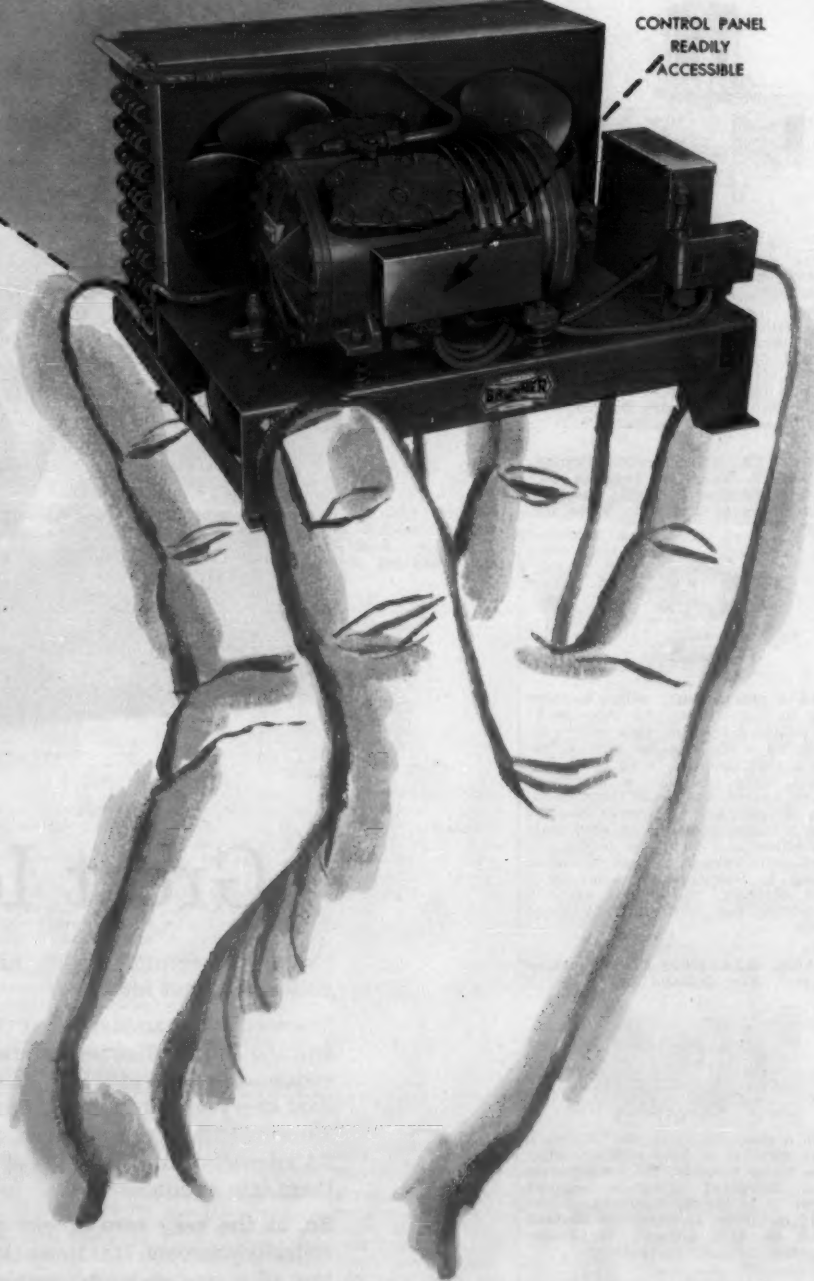
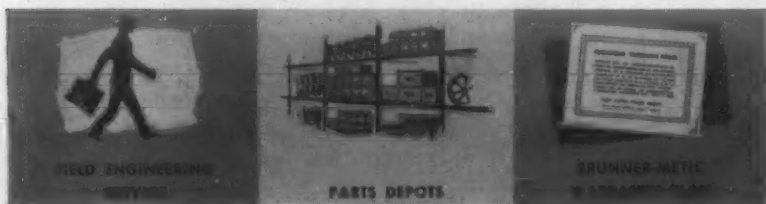
Extension of the already diverse Brunner line to include new 4 and 6 cylinder 3, 5 and 7 $\frac{1}{2}$ HP units has a special significance to you. Now . . . from one source, with one responsibility . . . there are Brunner-Metic units available to fill an even wider range of your requirements.

And behind every unit is the Brunner backing that builds customer confidence and repeat sales. Every Brunner-Metic customer is automatically protected by a standard one year warranty. With the optional Brunner-Metic five year protection policy, the complete unit is protected for the first year and the motor-compressor is protected for four additional years.

Parts Depots located in every principal city eliminate red tape and delay in waiting for parts from the factory.

Regardless of where unit was purchased, the nearest Brunner-Metic Wholesaler handles warranty transaction, F.O.B. his location. Result: your customer has speedier service . . . you save on freight both ways.

211 Wholesaler locations, 16 Sales Offices, over 100 sales engineers . . . all ready to work with you on engineering the proper unit for your specific application.



Write today for complete information on the expanded Brunner-Metic line.

Dunham-Bush, Inc.

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